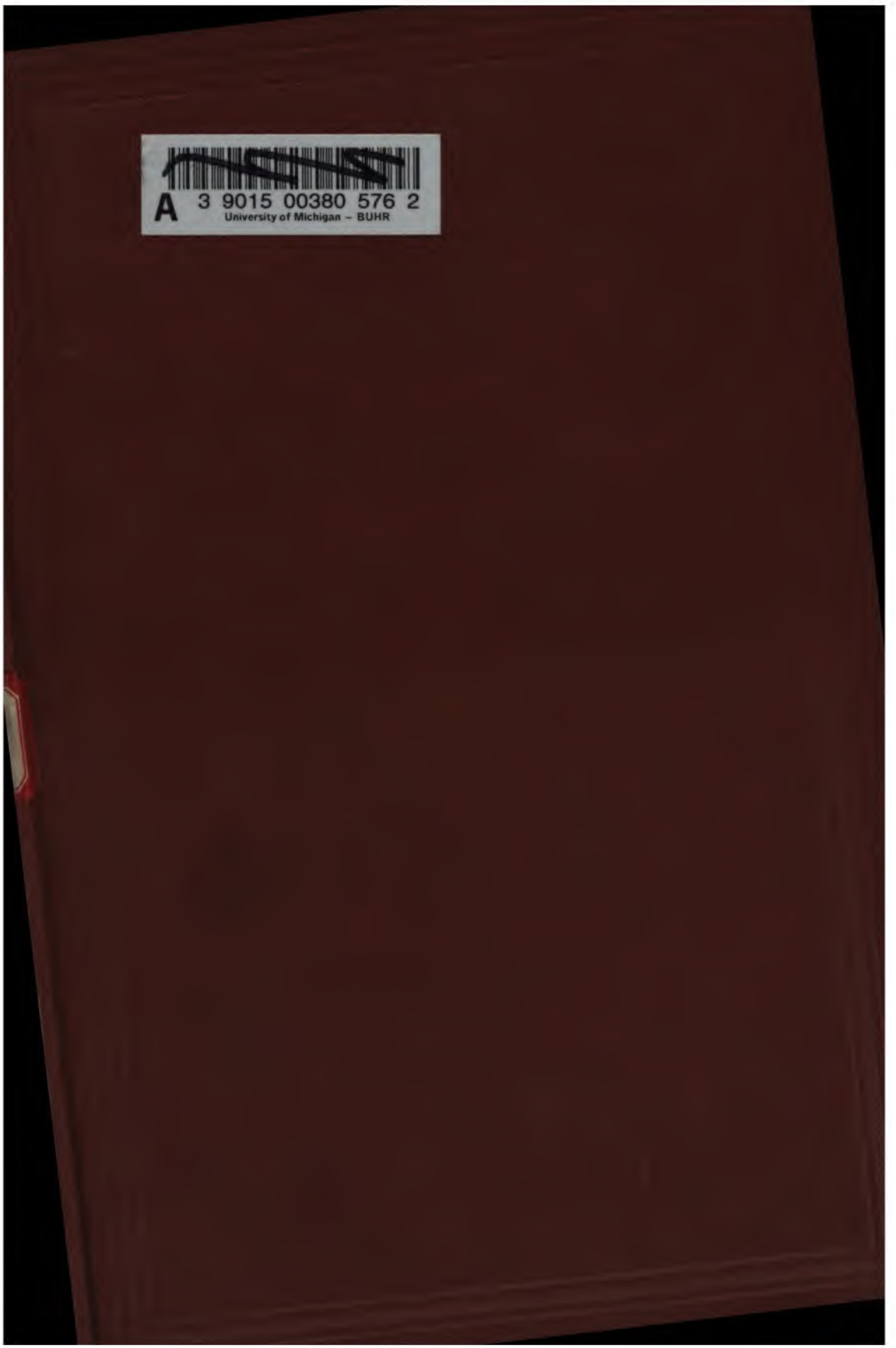

Indiana State Medical Society

TRANSACTIONS

OF THE

INDIANA

STATE MEDICAL SOCIETY,

1878.

TWENTY-EIGHTH ANNUAL SESSION.

INDIANAPOLIS:
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1878.

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CONTENTS.

		PAGE.
I.	PRESIDENT'S ADDRESS: STATE PREVENTIVE MEDICINE—*L. D. Waterman, M. D.*, Indianapolis	1
II.	THE MEDICAL WITNESS—*Wilson Hobbs, M. D.*, Knightstown	13
III.	INFANTILE CONVULSIONS: TREATMENT DURING THE PAROXYSM—*James F. Hibberd, M. D.*, Richmond	53
IV.	CONSERVATIVE SURGERY—*L. Humphreys, M. D.*, South Bend	60
V.	REPORT OF PUBLIC HYGIENE IN INDIANA—*Thad. M. Stevens, M. D.*, Indianapolis	67
VI.	AN EPIDEMIC OF DIPHTHERIA—*T. Travel, M. D.*, Westville	76
VII.	NASAL CATARRH—*John S. Dare, M. D.*, Bloomingdale	86
VIII.	REPORT OF A CASE OF BASEDOW'S OR GRAVES' DISEASE—*Thomas J. Dills, M. D.*, Fort Wayne	92
IX.	AN EPIDEMIC OF SMALL-POX—*W. W. Blair, M. D.*, Princeton	96
X.	UPWARD DISLOCATION OF THE STERNAL END OF THE CLAVICLE—*Jos. A. Eastman, M. D.*, Indianapolis	98
	ON THE ETIOLOGY AND TREATMENT OF UNAVOIDABLE HEMORRHAGE—*George W. Mears, M. D.*, Indianapolis	102
XI.	PLACENTA PREVIA—*George Sutton, M. D.*, Aurora	111
XIII.	TRANSACTIONS OF THE TWENTY-EIGHTH ANNUAL SESSION	137
XIV.	CONSTITUTION	161
XV.	BY-LAWS	166
XVI.	LIST OF MEMBERS	169

ERRATA.

Page 65, eighth line from the top, insert "Dr." before "Dayton."

Page 65, eighteenth line from the top, for "calsis," read "calcis."

Page 73, sixth line from the bottom, for "a dynamic," read "adynamic."

Page 105, nineteenth line from the bottom, for "Medows," read "Meadows."

Page 114, fifteenth line from the top, for "dilation," read "dilatation."

Page 115, eleventh line from the bottom, for "Now," read "How."

Page 115, last line, for "known," read "shown."

Page 133. The remarks on this page attributed to Dr. Sutton, by a mistake of the reporter, should have been credited to Dr. Mears, after the special reading of Dr. Sutton's first case.

ADDRESS OF THE PRESIDENT.

L. D. WATERMAN, M. D., INDIANAPOLIS.

One of the objects of this Society is the promotion of all measures "to improve the health and protect the lives of community." In furtherance of this purpose this Society has heard addresses, passed resolutions, and appointed committees with reference to a State Board of Health for several years. Not much has yet apparently been accomplished by these means beyond arousing a gradually increasing interest in the subject of State Preventive Medicine.

This Society is composed of experienced physicians, who, by especial training and personal investigation in disease, are best qualified to judge as to the causes that impair health in aggregations of persons, as in individuals.

You have met, as delegated representatives of the three thousand physicians of the State, to investigate the laws which govern disease, with a view to limit its ravages; and further consideration of this subject, of such preëminent importance, will be appropriate to, and further, the object of your assemblage.

This Society, corroborated by other associations of similar character, has asserted, and continues with ever-increasing emphasis to assert, that a large portion of the sickness of community, with its attendant sorrow, expense, and loss of valuable life, is preventable; and that no voluntary association of physicians or other individuals is sufficiently powerful, or can be expected to work with the concentration, expedition, or authority, to effect anything satisfactory toward the reduction to their lowest limits of the causes of disease, as acting on the whole community.

It is susceptible of demonstration that an intelligent body, whose sole duty shall be to avert disease, will save, in money, the cost of its maintenance more than one hundred fold; and humanity alone urges the establishment, in every integral organization of the social state, such a health-preserving organization.

Want of information and the consequent indifference of the people, the contentions of sects in our profession, and the hesitancy of the law-making power to enter upon untried fields of administrative work, have so far prevented the accomplishment of anything in this direction in this State. Many other States of this Union have already put into successful operation such organized effort to prevent disease, and have been already signally rewarded in direct results, and also in the increased intelligence upon such subjects and the consequently coöperative vigilance of their inhabitants.

To every person who has studied the intellectual movements of organized civilization, it will be apparent that there is gradually developing a greater respect for, and valuation of, human life. With increasing density of population will come upon this State, as it has upon the older ones, the greater urgency of protecting the lives of its citizens from the injurious influences of the actions and reactions of men and their avocations upon their fellow men. To do so effectually, amidst the fluctuating purposes and feelings and conflicting interests of a busy and ever-changing population, an organized body, whose purpose and reason of existence is the protection of the health of the people, becomes a necessity. To be efficient it must be commensurate in the extent of its powers with the territory inhabited by those who are to be protected. Such an organization is inevitable, and efforts in that direction can only cease with its proper establishment.

The physical laws of nature execute themselves in organized communities as in an individual. If either would escape the penalty, it must study and understand those laws, and so live amid such conditions as not to violate them. If a community breathes air impregnated with noxious gases or exhalations, or drinks water containing miasm or sewage liquids, or is fed with food rendered deleterious by adulteration, disease, sooner or later, is the inevitable result. That many of the devastating diseases (the annual mortality of which, in a State as large as this, equals that of a great battle) may yet be determined to arise from conditions which are as yet unknown, but which when known are easily avoided, is highly probable. There is so much yet undetermined as to the causes and conditions favoring the development of many of the forms of consumption, that it is not beyond possibility that, in part, at least, they may be found in human food.

The further the microscope enables us to comprehend the number and variety of the otherwise invisible forms of living things—fungi and their countless spores everywhere swarming on the vegetable world that largely

forms the food of man and of the animals that supply that food; and bacteria, those lowest microscopic organisms, the immense number of which, with their germs, infest the air we breathe, the food we eat, and the liquids we drink—the more we are impressed with the conviction that their investigation will reveal the heretofore unknown causes of many diseases; and the study of these organisms enable man to avert diseases now fatal. It may be ascertained that many of the epidemic visitations of disease find their invitation to particular regions in the perversions of bodily nutrition arising from unhealthy alimentation, or are rendered possible, and occasionally unusually fatal, from the existence of deranged nutrition of the bioplasmic elements of the body, resulting from unhealthy ingesta. How far organized effort may clear up these and other obscure places, and render possible the extinction of diseases now decimating, must be determined by future effort. That this Society and its coadjutors will be found faithfully upholding and assisting whatever honest effort shall be hereafter made to lessen the amount and limit the fatality of disease, its unrewarded efforts for the past twenty-seven years in this direction give ample assurance. Meanwhile it is our duty not to allow discouragement to relax our endeavors in behalf of those who do not appreciate, as we do, the necessity for efforts to prevent disease. We must not cease our labors, as a body, until the citizens of this State have pure air to breathe, pure water to drink, unadulterated food and medicines, live in buildings that are not sources of infection to themselves or their neighbors, and have an intelligent body of agents to warn and protect them from preventable, indigenous, and importable causes of disease. We must continue to strive until the death-rate of this people has been reduced to at least seventeen to one thousand persons per annum.

Legislation in Indiana, in reference to public health, is very meagre. There are statutes as follows: Forbidding the importation of Texas cattle from April 1 to October 1 of each year, and of cattle infected with 'Texas fever' at any time; declaring that if that disease appears in any place within sixty days after the importation of Texas cattle, it shall be *prima facie* evidence that the imported cattle were infected with 'Texas fever,' and their owner liable for damages: ordering the burning or burial, without delay, of hogs dying of 'hog cholera,' on penalty of misdemeanor, which is fine or fine and imprisonment in jail: declaring it a misdemeanor to allow, knowingly, sheep afflicted with contagious diseases to run at large, or to sell the same as healthy, under penalty of a fine of from two to twenty-five dollars for each violation: declaring it a misdemeanor, with a fine of from five to twenty dollars, to throw carrion into a running stream

or a lake, or to bury the same on the bank thereof: declaring it a misdemeanor, with similar fine, to feed cocculus indicus to fish in streams: forbidding the selling of unwholesome for wholesome provisions, under penalty of a fine of five hundred dollars and imprisonment not more than six months in jail: forbidding the adulteration deleteriously of intoxicating drinks: declaring the mingling of poison with food, with intent to injure any human being, or poisoning any spring, well, or reservoir, shall be punished by imprisonment in the state's prison from two to four years: forbidding the employment in any cotton or woolen mill, for more than ten hours in a day, of any male or female person under sixteen years of age, under penalty of a fine of from fifty to one hundred dollars. There is an indirect recognition of Boards of Health in the statute giving cities (incorporated towns of twenty-five hundred inhabitants) power to create such by name, not defining their duties or powers, but leaving the same to the cities, subject of course to the limitation of their own powers.

In addition to the above, there are the general statutes defining nuisance. Davis' Digest, 1876, defines a nuisance, under Indiana law, as "whatever is injurious to health, or indecent or offensive to the senses, or an obstruction to the use of property so as essentially to interfere with the comfortable enjoyment of life or property." A nuisance can not always be abated—only damages for it obtained in some cases. Declaring it such does not include its abatement. To erect or maintain a public nuisance is subject to a fine not to exceed one hundred dollars.

There are, as far as I can learn, in the legislative enactments of this State no other indications of any effort to protect its citizens from disease. With the fatal pestilences that sweep over communities from time to time, as all history shows, the people are left to contend as best they can when afflicted with their immediate presence. The steady approach of such a pestilence toward our borders may herald its visitation for months, but no organized effort can be made, under our present governmental machinery, to stay its entrance or prevent its devastating march across our domain. All is necessarily left to the confused and spasmodic efforts of individuals, and the often misdirected exertions of disconnected town authorities.

In view of the increasing density of our population and the greater complexity of our social employments, involving constantly growing intensity of disease-fostering conditions, this laxity and want of prudence in not doing what can be done to anticipate (what all older communities have found by experience are sure to come) wide-wasting disease-waves, is discreditable unwisdom.

Every impulse of human sympathy—now widened under higher civil-

ization into humanity, and which lies at the foundation of medical science, inspires and upholds it in its aims toward perfection as the noblest and most comprehensive of all earthly sciences—speaks with clear and unhesitating utterance that it is the highest duty, as it should be the foremost purpose, of organized society to protect to the uttermost of its ability human health and life. But aside from this consideration, the self-interest of States, as of individuals, utters no uncertain voice on this subject.

Disease, considered only from a financial point of view, is one of the most expensive and wasteful directions in which imperfectly organized society is taxed for its carelessness and ignorance. Under the complicated life in our modern civilization, with its necessary refuse, human beings are constantly subjected to strains and exposed to conditions to which neither the race nor the individual has become adjusted, or is even as yet adjustable. Hence new diseases and new manifestations of the customary ones are constantly occurring.

The money-value of a human life has been variously estimated. Dr. Farr, Superintendent of the Statistical Department of the office of the Registrar-General of England, puts the value to the State of an average adult man of twenty-five years of age, at $625. The value of a soldier to the United States government is usually calculated at $1,000, based on the cost of replacing the soldier in the service. The usual estimate of the value of an average life to the community is approximated by various methods of calculation at $1,000, which is believed to be a fair mean of many estimates. The loss of such a life to the State can therefore be computed with sufficient accuracy to be the basis of suggestive calculations as to the loss of the community from an epidemic visitation of disease, with its consequent loss of training, food, clothing, education and prospective products of labor by reason of premature death. The amount in one of many such but little noticed epidemics of disease, will be found to amount to a startling sum—a sum which if lost by bad harbors or drainage, or overflow of streams, or imperfect market facilities, or other similar cause, would for its avoidance excite legislative expenditures proportionate to its amount.

If an epidemic disease kills two thousand persons out of two millions (about the population of this State), or one in a thousand, of an average age of twenty-five years, (the expectation of life of each being thirty-five years), twenty thousand years of life will be destroyed. Estimating the value to the State of each year's labor at $50, the loss in money will be $1,000,000. Besides, the sick who do not die are consumers, not producers, while disabled by disease. And an appreciable proportion are

permanently disabled, and therefore left a burden on society. "The preventable deaths—the excess over the unavoidable death-toll—of England during the ten years from 1860 to 1870 amounted to one hundred and fifteen thousand eight hundred and thirty-three lives."* The Irish famine and fever of 1846–7 cost Great Britain $50,000,000, and two hundred and seventy-five thousand lives by death, and a loss by emigration of nine hundred thousand more of its laboring population.

Considering this tendency to occasional outbursts of fatality in typhus, typhoid, enteric, malarial, erysipelatous, yellow, diphtheritic, cerebro-spinal, bubonic, carbuncular, and other febrile and septicæmic diseases; and furthermore that pneumonitis, bronchitis, and many of our more familiar diseases, are possibly dependent for their exceptional mortality upon an epidemic cause, as are also many of the diseases that cause such a disproportionate mortality during the first four years of infantile life, it would seem that an intelligent community, without taking into consideration the humanitarian and moral aspects of the question, would exert its energies to organize an efficient agency to arrest as far as possible this waste of life and money.

Statistics show that an individual loses, on an average, nineteen to twenty days per year by sickness. In England for every death there are two persons constantly sick; in other words, "every death implies a total average of seven hundred and thirty days of sickness."† "In the Massachusetts Registration Report for 1872 a computation is made showing" * * * "in the whole State during the same year 35,019 deaths to a population of 1,541,542, which would give 70,038 years of sickness, or seventeen days to each individual in the State."

In Massachusetts for eight years, 1865 to 1872, inclusive, with an average population of 1,400,522, the average annual mortality (by computation) was 26,813. There were, therefore, 19,573,490 days of sickness, or 13.9 days to each person. As substantiating this, there is about one death to eleven patients, even in hospitals, when a large number of hospitals are averaged. Dr. Playfair computed one death to twenty-eight cases of sickness, in a mixed population. In the Massachusetts hospitals the average sickness may be fairly estimated at thirty-five days, or 13.1 by calculation, to each person in the State. The working population of that State has been fairly calculated from the last census report at thirty-nine per cent. of all persons. This would reduce the working time of such

* Dr. W. Farr, supplement to 35th An. Rep of Reg. Gen. of England, 1875.

† W. E. Boardman, M. D., Mass. Board of Health Report, 1875.

persons to the extent of an average loss of 20,914 years of labor in each year. In Massachusetts $7.40 represent the average amount received weekly by each individual. A minimum loss, therefore, of one dollar per day may be safely used as a basis of calculation. The average cost per hospital patient in Massachusetts is nine dollars per week, medical attendance being gratuitous; consequently we may safely estimate, as does Dr. Boardman (from whom I have freely obtained these facts), that the minimum cost per day, in loss of wages and sickness expenses, is two dollars per day. Hence, by easy calculation, the annual loss to Massachusetts, by sickness in the working or sustaining population only, is $15,267,332.

It has been reliably computed that the lowest death-rate, for any series of years, which can be possibly obtained, is eleven to one thousand persons. A reduction in the death-rate of Massachusetts from nineteen to fifteen—four in one thousand persons each year—would save, in sickness, to the working population of that State $3,190,916. By similar calculation New York City, in 1876, lost by

Lost labor	$8,298,566
Expense of sickness	22,417,590
Adult lives ($1,000 each)	8,580,000
	$39,296,156

If the mortality of that city had been twenty-one instead of twenty-nine per thousand persons, the aggregate loss would have been reduced by $10,838,840, equal to the interest at seven per cent. per annum on $150,000,000.* "The wealth of a State is the sum of the property of all the persons in it, and its strength the sum of all the effective people, deducting all the personal incumbrances, sicknesses, disabilities, and imperfections." It will be seen, therefore, that a State has an interest in the prosperity and health of its inhabitants.

"In Massachusetts, during the seven years (1865 to 1871), 72,727 died in their working period. In the fullness of health and completeness of life, they would have had opportunity of laboring for themselves, their families, and the public—in all 3,606,350 years; but the total of their labors amounted only to 1,681,125 years, leaving a loss of 1,925,224 years by reason of their premature death. This was an average annual loss of 276,461 years of service and coöperation. Thus it appears that in Massachusetts, one of the most favored States of this country and of the world, those who died within seven years had contributed to the public

*G. Ransom, M. D., Trans. Inter-National Med. Ass., 1876.

support less than half—46.07 per cent.—of what is done in the best conditions of life."*

There was also, in a single year (1870), in addition to the 276,461 years of loss by premature death, 24,553 years of loss by sickness, "making 301,014 years' loss of force or productive power in a single year. It is manifest, then, that the first and largest interest of the State lies in this great agency of human power—the health of the people. The progress of civilization is best manifested in the progress of vitality."†

In Geneva, Switzerland, whose records are the most complete of any known, civilization, by fostering the conditions that prolong life, in the last three hundred years has increased the average longevity from 21.21 to 40.68 years.

In the United States it is calculated that of 10,000 persons born, only 6,543 reach twenty years—the productive age.

In seven years, ending with 1871, in Massachusetts (see Thirteenth Report of Mortality) 81,029 persons died under twenty years of age. The sum of these ended lives, from the tables, amounted to 292,762 years. This, at fifty dollars per year, had therefore cost $14,638,100, which had of course been paid from the property or earnings of their families.

The productive efficiency of a life—from twenty to seventy years—falls short in the United States 28.38 per cent. from ideal fullness; the average duration enjoyed being but 37.46 years, instead of fifty years.

For thirty-eight years there has been, in Great Britain, a reliable registry of births, deaths, and marriages. The facts furnished by the reports of the Registrar General's office "give an insight into the condition, changes, adversity or prosperity of the nation; show the need of various reforms; and furnish cogent arguments for" local and general action. They show that of a million children born in Great Britain, "one-fourth die before reaching the age of five years. Between five and ten years, one-seventh part of the remaining number die. The deaths between ten and fifteen years are fewer than at any other period of life. * * * From fifteen to twenty the mortality increases again;" and varies but little "until between the age of forty and forty-five, when the mortality increases again. At fifty the million has dwindled to 420,000—less than half. But 160,000 reach seventy-five to eighty-five. In a few years it is but 38,000, and only two hundred and twenty attain about one hundred years."

From the age of fifteen consumption threatens heavily the persons who

* Jarvis. Mass. Board of Health Rep., 1874.

† Jarvis. Mass. Board of Health Rep., 1874.

have survived the destroying diseases of infancy, but it is "most destructive between the ages of twenty and thirty-five." "At thirty-five the strain of the struggle for existence shows itself clearly in the fatality from diseases of the principal organs of the body." "From that time to the age of fifty-five affections of the heart and brain show by their increasing numbers the effect of the strain. From fifty-five to sixty-five diseases of the lungs, heart and brain are, proportionately to those who survive, especially fatal. At this time the greatest proportionate number of suicides occur. From sixty-five onward, the effects of weather on mortality are most visible."*

In nearly all the sanitary problems there are questions at present unsolvable, and which will probably remain so until collateral investigation has carried the subject under new and brighter illumination. Yet it is now estimated by the highest English sanitary authorities, on what is believed to be correct calculations, that all mortality in that commonwealth, and by inference in this also, in excess of seventeen per thousand persons per annum is, in the present state of sanitary science, preventable, "being not due to the mortality incident to human nature, but to repellable foreign causes."

It is clearly urgent that an organized effort should be made to accomplish all that can be accomplished in the direction of the prevention of disease, and as rapidly as scientific study of disease and the laws of its origin enabled further advances to be made in their systematic prevention, the State should have the organized instrument to make them, and be willing to expend the necessary money to secure to its inhabitants, in the way of disease-prevention and disease-extinction, all that modern sanitary science can suggest.

Our State has maintained an expensive machinery to enable it to present its claims to and allure immigrants. Is this not illogical, unless coupled with the effort to preserve the lives of its citizens, especially its children, who are, according to the best physiological and hygienic authorities, by hereditary adaptation, better adjusted to its climate, food and social state, and therefore promise greater usefulness than the population allured by immigration from the old world?

During the past, when sickness was regarded as a visitation of Providence, it was natural that humane persons should expend largely for hospitals. Now that disease is known to be subject to laws, and its causes largely avoidable by communities; and the domain of our knowledge rapidly increasing in that direction, while provision for the actual sick is well, expense for its avoidance is wiser.

* Abstract of Reg. Gen. Report, in Baltimore Sun, April 4, 1878.

The older civilized countries, especially where medical science stands highest, are establishing State medicine, with a view to prevent wasteful disease. Next to the prevention of bad morals in a community, is the necessity for the prevention of bad health. And in many ways the study of disease and its laws, and the application of the means for its prevention, would return a rich reward for the systematic and persistent effort made by an intelligent people in protecting themselves from its ravages.

"Disease is but a modification, temporary or permanent, in an organism through changed and abnormal conditions of existence." It is natural life under conditions which produce disturbance, and threaten the integrity of organs more or less necessary to existence. Ultimately substantial unity in treatment becomes unavoidable—a scientific necessity—delayed only by our present ignorance of the cause and its method of acting on the organism. As soon as all diseases became known to be subject to physical laws, it became logically necessary that the knowledge of those laws must lead to therapeutical agreement.

One undoubted cause of the retardation of our proper professional influence upon the public intelligence of the State arises from the clash of opposing medical sects, whose antipathy leads them to resist whatever of purposed good toward the people may be inaugurated by others than themselves. It seems to me that the time has come when such antagonism should cease, and these differences, so reciprocally retarding, should give place to tolerance. I see no reason why, without indorsing or lending countenance to crude opinions in medical science, in the name of that larger liberty which is the parent of progress, toleration should not be shown to whoever desires honestly and earnestly to coöperate with us for purposes of public good.

Sooner or later this community must protect its ignorant and innocent members from the injury constantly sustained from incompetent and dishonest physicians, by establishing a compulsory standard of professional acquirement, below which no legal administration of drugs or performance of surgical operations shall be possible. This the State owes to each of its inhabitants, until the ideally perfect education which can protect itself has been reached. To foster this proper grade of professional intelligence, the State owes to its inhabitants, and it will be its duty and interest alike, to encourage rather than retard the establishment of an institution for the medical education of its suitable young men, furnished with all the requirements approved in the foremost institutions of like character in the world. A high conception of reciprocity demands that it should also attempt to add something to the sum of absolute knowledge. To further this effort

there should be a closer relation between the State Medical Society and the medical schools within the limits of its influence. Some carefully guarded means should be organized of excluding persons unfit by natural endowments or character from the study of so responsible a profession; and still more imperatively to exclude such from receiving the highest professional indorsement as to fitness to discharge the most responsible office that can be put upon a person.

This Society should clearly express what is unquestionably its opinion, and express it in such a way as to be respected hereafter; that at least three full years of exclusively professional study should precede any permission from any source to practice medicine within this State. Various circumstances have conspired to reduce this period, in many instances, and it is well known that examinations, unless guarded from all collusions, are untrustworthy; even then, testing memory, not judgment.

To further, indirectly, but most surely, these objects this Society should take effective steps to secure the purity and reliability of the medicines dispensed to the sick. The trade in medicines is notoriously almost entirely on a commercial basis; those articles being dispensed which afford the largest profit to the vender. This is indisputable in respect to articles rarely used by the consumer, and therefore usually undetectable in their adulterations. Nothing but the determined and persistent influence of the profession, and especially through our organization, will at last compel a higher standard by creating such public opinion as to render the issuance of unreliable medicines unprofitable. The human body, in its integrity, will often tolerate much before succumbing to sickness; but the administration to the invalid, suffering and struggling with disease, of unreliable medicines, is something that will not long, let us hope, be tolerated.

The science of medicine is slowly but steadily advancing toward the time when the knowledge of what the diseased condition is, and its true cause will be ascertainable in any given case; and the therapeutical means for its control, when controllable, will be clearly discernible. Ere this desirable state of comparative perfection has been reached, new methods of experiment may be necessary. If so, they will be tried. Possibly advance may be made by the more extensive study, under the microscope and otherwise, of the effects of therapeutical remedies upon the bioplasmic elements, which are the active tissue builders and vital elements of the body. It has long been recognized that observations on the body, as a whole, furnish often too complex a result to give clear indications for the application of medicines with that certainty of correct direction which is desirable. The study of the effects of medicines upon the

various bioplasmic elements of the tissues may yet eliminate the complexity from the problem, and by giving us clear ideas of the modifications produced by agents upon the structures of the living elementary organizations, enable us to control those departures from textural integrity, now known under various names as diseases involving the nutritive processes of the tissues.

Whatever method be followed, the aim is clear and the necessity paramount. As the power of the physician to discriminate more clearly diseased states in their essential conditions, becomes greater, the more pressing will be felt the necessity of accuracy in the aim of the medicine by which it is to be influenced. There can be no rest to professional endeavor until the nature, cause, and remedy of any diseased state are settled beyond reasonable intelligent dispute. The time is far off, but the effort of the human intellect finds prospective rest only at that period.

We are now witnessing the benefits of the development of the antiseptic idea as applied to medicine and surgery. The era of coarser mechanism in practical medicine is giving place to more refined and physiological aims. The isolation and detoxication of injurious matters within the organism, and the study of the laws which preserve the purity of the nutritive fluids and govern their flow toward special textures, will possibly be the direction for the immediate future of investigation.

Our organization needs the inspiriting influence of coöperation for such higher purposes as justify our existence and intensify the enthusiasm of our fellowship. Mutual and combined endeavor toward the discovery of the fundamental facts that are yet to reveal the laws that govern the development and progress of disease in our midst, would do more to compact us for future good, and eclipse the disputes that threaten our peace and usefulness, than rhetoric or censorship.

This State has men of intellectual strength, and its people are afflicted with almost all diseases, but there is yet but a meagre opportunity for investigation under circumstances which render it successful in results. There is not, as yet, the fostering appreciation which stimulates to unselfish devotion to discovery in the deeper fields of study. It is our duty to help this temporary stage to pass speedily; at least to contribute our share to the influences which are advancing medical science.

THE MEDICAL WITNESS.

WILSON HOBBS, M. D., KNIGHTSTOWN, IND.

At the session of this Society last year I had the honor to present a paper entitled "The Medical Witness," which, by your favor, appears in the volume of "Transactions" of that year.

The paragraphs of that paper which seem to have claimed most notice from the profession of the State and country are those which assert and discuss the right of the physician and surgeon, when called into the courts to testify as a medical expert, to demand compensation for such service as for professional consultation and opinions, and that until such compensation is paid or assured him, he can not be compelled to answer the questions propounded to him.

The practice of the courts in this country is this: When evidence is wanted in a case at bar, the clerk of the court subpœnas the persons designated by the parties litigant, which process indicates on whose behalf each is called, whether the plaintiff or defendant; but it does not specify the character of the testimony expected, whether as to facts or opinions. The party upon whom the process is served is not supposed to know what questions will be asked him upon the witness stand, and failure promptly to answer the subpœna by attendance at court, at the time and place designated, is held to be contempt of court, and punishable as such. It has been the uniform practice of medical men, like all other witnesses, to obey the call of the court, and answer all questions put to them, whether as to facts or to opinions of skill and learning, without demand for other compensation than that allowed by law as per diem and mileage to all witnesses alike, unless a private engagement has been made with the party calling them for other and sufficient pay. And even when that precaution has been taken to be assured of reasonable compensation for the service, the facts relating to such agreement have usually been extorted from the expert by counsel on the other side and paraded before the court and jury in order to impair the force of his testimony.

This submission to custom, by physicians and surgeons, has continued in the face of the teaching of almost all writers of standard works on medical jurisprudence, that there is a difference between a "common" and an "expert" witness, and such a difference that while the former is obliged to answer as to facts known to him, the latter can refuse to communicate his professional knowledge and opinions until compensation as for "particular services" is paid or assured him.

The authority most relied on in my paper of last year was Hon. John Ordronaux, M. D., in his "Jurisprudence of Medicine" and private correspondence had with him. The criticisms passed upon it in the discussion which followed the reading, by members of this Society, gentlemen in whose good judgment I have large confidence, and by members of the bench and bar whom I took occasion to consult, admonished me, before allowing the paper to go to press, to fortify it by an appendix consisting of reports of cases.

After a careful search through law libraries, and renewed correspondence with Mr. Ordronaux, I was astonished by the fact that there was no record of any English or American court upon the compulsion of the testimony of a medical expert, such a question at that time never having been squarely before a court of either country, or before any court in the world, so far as could be learned. A few cases had been presented in Great Britain which bear such relation to this question that they have given occasion to commit the principles of the law of that country to such teaching as that of Justice Maule, in *Webb* v. *Page*, wherein he was pleased to say: "There is a distinction between a witness to facts and a witness selected by a party to give opinions on a subject with which he is peculiarly conversant from his employment in life. The former is bound, as a matter of public duty, to testify to facts within his knowledge. The latter is under no such obligation, and the party who selects him must pay for his time before he can be compelled to testify."

In the jurisprudence of this country there are to be found very few cases which in any way relate to the question before us, and these few only incidentally—none directly; but in all of them the principle of the English common law is clearly distinguishable. In the matter of Roelker, in the District Court of the United States for Massachusetts, Judge Sprague decided that a German, who was called to act as interpreter, could not be compelled to attend and act as such while another German could be found in Boston who would answer the subpœna without attachment. The learned judge did not decide what should be done in case none could be found more willing than the first.

In the case of *The People* v. *Montgomery*, the court held that it was proper for the District Attorney to pay Dr. Hammond five hundred dollars to investigate the case and testify to his opinions. In *Blythe* v. *State*, 4 Ind., and *Webb* v. *Baird*, 6 Ind., the professional services of attorneys were held to be "particular services," within the meaning of the twenty-first section of the Bill of Rights. In the case of *Dr. Gaston* v. *The Board of Commissioners of Marion County*, the court clearly declared that the professional service of the physician has a specific value.

While in all these, as well as in some others not now necessary to rehearse, the common law principle, that the services of the physician and surgeon do not lose their ordinary rank and value as professional services when demanded by the courts to assist in the administration of justice, or by the public in any other capacity, was clearly discernible, it was seen more by inference than by direct statement. Since our last session, however, the question of the obligation of the physician and surgeon to give his professional services in the administration of justice as an expert, without reasonable compensation having been first paid or assured him, on a higher scale than that allowed to the common witness as per diem and mileage, has in four cases been squarely before the courts of this country, having been brought there by the positive refusal of members of the profession to testify as witnesses of learning and skill without such compensation.

In September, 1877, R. W. Hazlett, M. D., and J. H. Hardesty, M. D., gentlemen of ability and distinction in Wheeling, West Virginia, were subpœnaed in the trial of one Starkey, for murder, before the Circuit Court of Wetzel county, West Virginia. They were desired to examine the eyes and glasses of the widow, Mrs. Starkey, and testify to matters which would affect her credibility as a witness. After two days absence from business and home, a change of venue was taken to Marion county, and after five more days of waiting, Dr. Hazlett was called to the witness stand. In a private letter, he has given me the following account of the proceeding:

"When called to answer, after being qualified, I asked permission of the court to define the position we intended to occupy, thoroughly disclaiming all purpose of contempt, or disposition to delay or embarrass the proceedings of the court. I very respectfully but firmly declined to make any examination of the eyes or glasses of Mrs. Starkey, thereby qualifying myself to give a professional opinion for the benefit of the public without just compensation. The court sustained our objection, as did also the profession throughout the State. We expected commitment by the lower

court, and were in readiness to be heard at once on a writ of *habeas corpus*, and have the question settled by the Supreme Court, then in session. The failure of the judge of the Circuit Court to commit us for contempt leaves the question still unsettled by our higher court."

The next case in procedure was that of Dr. J. J. Dement, of Huntsville, Alabama. Having failed to get a personal account of this matter from Dr. Dement, I have only the published record of the court to guide me, which is herewith presented as taken from the *Central Law Journal*, St. Louis, Mo., January 4, 1878:

"TESTIMONY OF EXPERTS.

"*Ex Parte* DEMENT—*Supreme Court of Alabama.*

"Hon. R. C. BRICKELL, Chief Justice.
"Hon. A. R. MANNING, } Associate Justices.
"Hon. G. W. STONE, }

"A physician, like any other person, may be called to testify as an expert in a judicial investigation, whether it be of a civil or criminal nature, without being paid for his testimony as for a professional opinion; and upon refusal to testify, is punishable as for a contempt.

"Application for *certiorari*, etc., showing the following state of facts: One Kit Barnard was on trial in the Circuit Court of Madison on a charge of murder. Dr. J. J. Dement, the petitioner, was introduced as a witness for the State, the solicitor stating that he desired to examine him as an expert. After testifying that he was a physician, and had seen the deceased after he had received the wound which the prosecution asserted had produced death, he was asked to state the nature and character of the wound received, and its probable effect. This Dr. Dement declined to do, upon the ground that 'he had not been remumerated for his professional opinion, nor had compensation for professional opinion been promised or secured.' The court informed the witness that it was his duty to answer, and upon his declining to do so, imposed a fine of five dollars for contempt of court.

"Afterward the petitioner moved to have the fine set aside, on the ground that it was illegal, the court not having power to compel the petitioner to testify as a professional expert until compensation for his professional opinion was first paid for or secured.

"The court overruled this motion, and judgment for the fine was entered accordingly. This judgment entry recites the facts constituting the contempt as above stated, and the petitioner also reserved a bill of exceptions.

"*Brandon & Jones*, for petitioner: There is quite a difference between compelling a physician to testify to a fact which he has witnessed, and forcing him to appear merely to give the results of his peculiar skill and experience; or, in other words, under guise of calling him as an expert, to compel him to give professional opinions without being paid for them as such. To hold otherwise, subjects the professional man to unjust burdens, and makes improper discriminations against him. When a physician appears merely to testify to what he has seen or knows individually, he does only what any other citizen may be compelled to do; but when he has no actual knowledge of any fact in the case, and is nevertheless forced to testify without being paid as for a professional opinion, his skill and knowledge, which are his private property, are taken from him without compensation. 1 Sprague, 276; Elwell's Med. Jur., 592–3; Ordronaux Med. Jur., § 113; 3 Indiana, 497; 1 Brod. & Bing, 515; 5 M. & S. 156; 9 Cal. 178; Redfield on Wills, ch. 4, § 15.

"MANNING, J., delivered the opinion of the court:

"The question presented in this case is whether a physician is punishable, as for a contempt, for refusing to testify as an expert without being paid for his testimony as for a professional opinion.

"In 'Best's Principles of the Law of Evidence,' a philosophic English treatise (the sixth London edition of which was issued last year, and has been recently published in this country), it is said: 'The law allows no excuse for withholding evidence which is relevant to the matters in question before its tribunals, and is not protected from disclosure by some principle of legal policy. A person, therefore, who, without just cause, absents himself from a trial at which he has been duly summoned as a witness, or a witness who refuses to give evidence, or to answer questions which the court rules proper to be answered, is liable to punishment for contempt. An exception exists in the case of the sovereign, against whom, of course, no compulsory process of any kind can be used.' In a note to this paragraph, referring to a passage in a work of Jeremy Bentham, Mr. Best says: 'The following case has been put in illustration of the universality of this rule: "Were the Prince of Wales, the Archbishop of Canterbury, and the Lord High Chancellor to be passing in the same coach, while a chimney-sweeper and barrow-woman were in dispute about a half-penny worth of apples, and the chimney-sweeper and the barrow-

woman were to think proper to call upon them for their evidence, could they refuse it? No! most certainly not."'. Nothing is said in this work in relation to the exemption of physicians or other men of science.

"In *Collins* v. *Godefroy*, 1 B. & Ad. 950, in the Court of King's Bench, England, the plaintiff, an attorney, having attended six days on subpœna as a witness for defendant in a civil cause, to testify in respect to negligence and unskillfulness in the conduct of an action by another attorney, and not being called to testify, sued for six guineas as his regular fees for attendance. There was some evidence also of a consent to pay this sum. The counsel for Collins, the attorney, insisted that this was different from the case of an indictment for felony or a misdemeanor, in the prosecution of which the public may have an interest, and that in such a case it might be the duty of every person, duly called upon, to give his evidence. 'But,' he said, 'a party who attends a court of justice to give his evidence in a civil cause, does it not in discharge of a public duty, but to confer a benefit on an individual; and if he sustains a loss thereby, as every professional man must, he ought to have a reasonable compensation for that loss.' He referred to several prior cases and to the practice, as supporting his proposition. Lord Tenderden, C. J., delivering after advisement, the opinion of the whole court, said: 'If it be a duty imposed by law, upon a party regularly subpœnaed, to attend from time to time to give his evidence, then a promise to give him any remuneration for loss of time incurred in such attendance is a promise without consideration. We think such a duty is imposed by law; and * * * we are all of opinion that a party can not maintain an action for compensation for loss of time in attending a trial as a witness. We are aware of the practice which prevails in certain cases, of allowing as costs, between party and party, so much per day for the attendance of professional men, but that practice cannot alter the law. What the effect of our decision may be is not for our consideration.' This deliberate and unanimous decision of the High Court of King's Bench, adverse to the claim, was made in 1831.

"In the Court of Common Pleas, in the same year, Park, J., in respect to a similar question, said: 'In *Moor* v. *Adam* it was stated, that upon process in this country, allowance for time is made only to medical men or attorneys, a rule which appears to be hard and partial; for time to a poor man is of as much importance as to an attorney.' And Tindal, C. J., said: 'If that rule were to undergo revision, I can not say it would stand the test of examination. There is no reason for assuming that the time of medical men and attorneys is more valuable than that of others whose livelihood depends on their own exertions.' *Lovergan* v. *Royal Ex-*

change Assurance, 7 Bingh. 731. Afterward, in 1843, in a *nisi prius* case, *Webb* v. *Paige*, 1 Carr & Kirw. 23, a witness, who was called for plaintiff, to speak as to damage done to some furniture, and the expense necessary to repair or restore the injured articles, before being sworn applied for compensation for his loss of time. Maule, J., said: 'There is a distinction between the case of a man who sees a fact, and is called to prove it in a court of justice, and that of a man who is selected by a party to give his opinion about a matter with which he is peculiarly conversant from the nature of his employment in life. The former is bound, as a matter of public duty, to speak to a fact which happens to fall within his knowledge. Without such testimony the course of justice must be stopped. The latter is under no such obligation. There is no necessity for this evidence, and the party who selects him must pay him.' It is said that one or more like decisions have been made by judges on the circuit in England, but we have no reports of them, if there be any, within our reach here. The case in which the reasons for such a ruling are best expressed, is *In the matter of* Roelker, in the District Court of the United States for Massachusetts. Sprague's Decisions, 276. During a trial, upon an indictment, the district attorney moved for a *capias* against Roelker, a German, who had been summoned to act as an interpreter of the testimony of some German witnesses, and had neglected or refused to attend. Sprague, J., said: 'A similar question has heretofore arisen as to experts, and I have declined to issue process to arrest in such cases. When a person has knowledge of any fact pertinent to an issue to be tried, he may be compelled to attend as a witness. In this all stand upon equal ground. But to compel a person to attend merely because he is accomplished in a particular science, art, or profession, would subject the same individual to be called upon in every cause in which any question in his department of knowledge is to be solved. Thus, the most eminent physician might be compelled, merely for ordinary witness fees, to attend from the remotest part of the district, and give his opinion in every trial in which a medical question should arise. * * * * The case of an interpreter is analogous to that of an expert. It is not necessary to say what the court would do if it appeared that no other interpreter could be obtained by reasonable effort. Such a case is not made as the foundation of this motion. It is well known that there are in Boston many native Germans and others skilled in both the German and English languages, some of whom, it may be presumed, might, without difficulty, be induced to attend for an adequate compensation.' The head-notes, prepared by Judge Sprague himself, to this case are as follows: 'The court will not

compel the attendance of an interpreter, or expert, who has neglected to obey a subpœna, unless in case of necessity. *Semble.* That a person may be compelled to attend as an interpreter, in case no other can be obtained to perform that office.' These are all the *decisions* we have found that shed light on the question involved. And those in England were influenced by the statute on the subject of 5 Eliz., ch. 9, which enacts that the witness must 'have tendered to him, according to his countenance, or calling, his reasonable charges.' But in this country, as Mr. Greenleaf says (1 Ev., 12th Ed., § 310), "these reasonable expenses are settled by statutes at a fixed sum for each day's actual attendance, and for each mile's travel from the residence of the witness to the place of trial and back, without regard to the employment of the witness or his rank in life.' See also Revised Code, §§ 2783, 4220 and 4015 to 4021.

"We have quoted so largely from the opinions of courts in causes before them to be adjudicated, partly because it was desirable it should be known what was actually decided, and partly because of the interest taken in the question by gentlemen of the medical fraternity. They have been led into some error on the subject by the misconceptions of writers whose works relating to medical jurisprudence are properly found in their libraries, as well as in those of lawyers.

"It will be noticed that it has not been adjudged, in any of the cases cited, that a physician or other person examined as an expert is entitled to be paid for his testimony as for *professional opinions.*

"The reports contain nothing to this effect. The English cases only indicate, and it is implied by the decision of Judge Sprague that persons summoned to testify as experts ought to receive compensation for their *loss of time.* And it is to be inferred that the judges delivering some of the opinions thought the time of such a witness ought to be valued, in the language of the English statute, 'according to his countenance and calling.' But it is not intimated by any of them that a physician, when testifying, is to be considered as exercising his skill and learning in the healing art, which is his high vocation; or that a counselor at law, in the same situation, is exerting his talents and acquirements in professionally investigating and upholding the rights of a client. If this were so, each one should be paid for his testimony as a witness, as he is paid by clients, or patients, according to the importance of the case and his own established reputation for ability and skill. But, in truth, he is not really employed or retained by any person. And the evidence he is required to give should not be given with the intent to take the part of either contestant in

the suit, but with a strict regard to the truth, in order to aid the court to pronounce a correct judgment.

"Perhaps the attitude of one testifying as an expert on a matter in respect to which he is made conversant or skilled by his ordinary employment, is not so different, as is supposed, from that of another who testifies to acts or things done by or between the parties to a cause. It generally happens that, after all the direct facts of a transaction are brought before a court, a knowledge of other facts, not part of the dealing or affair between the litigants, is necessary to a proper understanding and decision thereupon. For instance, one man may contract to sell and deliver to another, on a certain future day, for a price agreed on, a specified quantity of a valuable commodity, and afterward fail or refuse to do so, and thereupon be sued by the latter. Witnesses to the agreement between them must be produced to prove the contract, of course; but when this is fully done, it must be further shown to the court and jury what was the value of the commodity on the day and at the place where it was to be delivered; else it can not be known what sum of money would be an adequate compensation for the breach of the contract. And to prove this value it may be necessary to call in some person who was living at that place at that time, and a dealer in commodities of the same kind, who did not know, and had never before heard of, the parties to the cause. Or, if the contract supposed was made in a country foreign from that in which the suit was brought, and it depended upon the laws of that foreign country whether it was valid or not, the court would need to be informed what its laws were concerning the making of such a contract, that it might know whether or not it was validly made. And if lawyers of that country were within the jurisdiction of the court, it might be necessary to have the testimony of one or more of them to prove what those laws were. Or, if the contract was made and to be performed in a place of much trade, and contained terms having a peculiar but well established meaning according to the usage and dealings among persons engaged in that trade, which meaning it was important to have proved, merchants, or other persons engaged therein, would have to be brought before the court to prove the usage and meaning, just as an interpreter would be called in to translate writings in a foreign language.

"In all these instances, persons who may be wholly unacquainted with the parties to a cause, and know nothing of the transactions between them, may be required to come from their offices and the care of their own important affairs, into court to testify for the benefit of strangers, in regard to matters in which they have themselves become conversant only

by attending to their own business. And why are they required to do so? Because they know things important to the right determination of a controversy pending. And, in the language quoted at the commencement of this opinion, 'the law allows no excuse for withholding evidence which is relevant to the matters in question before its tribunals, and is not protected from disclosure by some principle of legal policy;' and because, also, as is well said in regard to *ordinary* witnesses in Ordronaux's 'Jurisprudence of Medicine:' 'The administration of justice being a source of mutual benefit to all the members of the community, each is under obligation to aid in furthering it, as a matter of public duty. As an *ordinary* witness, or a juror, every competent citizen may be summoned by due process of law to appear and render personal service in court, without right on his part to a special compensation for so doing. His time is, *quoad hoc*, claimed by the public as a tax paid by him to that system of laws which protects his rights as well as those of others.' Ed. of 1869, p. 138. But this accomplished and learned writer does not sustain, with the authority of adjudged cases, the following subsequent passage in his work, to wit: 'It is evident that the skill and professional experience of a man are so far his individual capital and property that he can not be compelled to bestow it gratuitously upon any party. Neither the public, any more than a private person, have a right to extort services from him in the line of his profession without adequate compensation. On the witness stand, precisely as in his office, his opinions may be given or withheld at pleasure; for a skilled witness can not be compelled to give an opinion, nor committed for contempt, if he refuses to do so. Whoever calls for an opinion from him in *chief* is under obligation to remunerate him, since he has to that extent employed him professionally; and the expert, at the outset, may decline giving his opinion until the party calling him either pays or agrees to pay him for it.' The first two sentences above quoted are probably correct, as general propositions. And the same might be as truly said of the time and knowledge of other persons. But the *exception* in favor of experts thus contended for, against the general rule relating to witnesses, is not established; and other passages in the same work indicate reasons why, until the legislature make provision for the compensation of experts, the courts must, in a manner that shall be as little oppressive as possible, insist, on proper occasions, upon their attending and testifying as ordinary witnesses. Thus the author truly says: 'As all definite knowledge springs from the possession of facts corroborating previous conjectures, so evidence is the expression of a necessity of the human mind for all such facts as will enable it to form a conclusive judgment. Without

evidence, therefore, there can be no knowledge; and, in order to secure it, the law seeks for testimony either through the mouths of living witnesses, the agency of written instruments, material objects and surrounding circumstances, or expressions of opinions predicated upon an acknowledged state of facts.' And again, he says, in relation to *experts* when testifying as witnesses: 'They are truly advisers of the court, *amici curiæ*, rather than parties interested in the trial.' And he adds: 'This fact, it is painful to confess, is too much ignored both by counsel as well as courts, and the expert is constantly apt to be treated as an interested party whose every word is tainted with the prejudice of a personal concern in the transaction.'

"It may, however, be said of other witnesses, also, that, in theory, they are disinterested and *amici curiæ*. All witnesses should be so, whether testifying to the facts of a transaction that happened under their own observation, or to those natural laws and effects which are learned only by experiment and study. And we may add that a cross-examination of those of the latter class must be allowed, as well as of those of the former, in order that it may be ascertained, so far as by such means it may be, whether they do, indeed, so well and accurately know the matters and things about which they testify, and are so free from bias and partisanship toward the individual concerned, or conflicting schools or theories, as to be wholly trustworthy witnesses. For, in fact, they all are witnesses at last. And the same principle which justifies the bringing of the mechanic from his work-shop, the merchant from his store-houses, the broker from 'change, or the lawyer from his engagements, to testify in regard to some matter which he has learned in the exercise of his art or profession, authorizes the summoning of a physician, or surgeon, or skilled apothecary, to testify of a like matter when relevant to a cause pending for determination in a judicial tribunal. And if, in a prosecution of an individual for murder, it was proved that his supposed victim had, a short time before his death, drank something which he had received from the accused, and a chemist had analyzed the liquid, and testified what substance it contained, and a physician was summoned to prove what effect they would have when taken into the stomach of a living man, and what would be the symptoms of such effect, no court would be excusable in exonerating the physician from giving such evidence, solely on the ground that it would be a professional opinion for which he had not been paid or received a promise of payment. In so testifying he would not be practicing the healing art; he would, like the merchant, or the lawyer, or the mechanic, before referred to, be deposing only to things which he had

learned in the course of his occupation or profession, or of the preparation for it, and the disclosure of which, to the court, would conduce to a correct understanding of a cause before it. His testimony would concern the administration of justice. And of him, as the other witnesses, it could be justly 'claimed by the public as a tax paid by him to that system of laws which protects his rights as well as others.' The decisions of courts concern the property, reputation, liberty or lives of men, and are carried into execution as the judgments of the law. Every individual, high or low, is subject to them. It is, therefore, of vital public interest that the tribunals which pronounce these judgments shall have power to coerce the production of any relevant evidence existing within the sphere of their jurisdiction requisite to prevent them from falling into error.

"Nothing we have said is intended to support the proposition, that a physician or surgeon could be punished as for a contempt for refusing, unless paid therefor, to make a *post mortem* examination, or undertake any other operation requiring skill and professional training, in order to qualify himself, when desired by the court so to do, to testify in a cause. This question is not before us. And it is not probable that such a case will ever arise between judges of this State and a profession so distinguished as that to which petitioner belongs, by liberal culture and a high sense of honor and duty. The case of *Gaston* v. *Marion County*, 3 Ind. Rep. 497, where it was held that the county would be liable for such a service performed in Indiana at the request of a coroner there, touches that question, but none involved in this cause.

"We infer, from circumstances disclosed by this record, though it does not so expressly appear, that this was designed by petitioner to be a test case merely on this subject. After a small fine imposed on him by the court, for refusing obedience to its requirements to testify, he did give his testimony, and the motion to set aside the fine afterward, and refusal of the court to do so, were probably intended to present a case to be decided here.

"We find no error in the judgment of the court below, and it is, therefore, affirmed."

Thus, unwisely, has the law been settled in the State of Alabama; but it is to be hoped that this opinion will very soon be overruled in the progress of judicial light and truth.

The next and remaining ten cases occurred in our own State, and they must interest us and the profession at large, as they have done, and will do more to settle the law in this country upon this question than all other judicial proceedings that have ever been had.

On the twenty-first of November, 1877, I received the following communication, viz:

"UNION CITY, IND., NOVEMBER 20, 1877.

"*Doctor W. Hobbs, Knightstown, Indiana:*

"DEAR SIR: I was very much interested in your paper, the 'Medical Witness,' read at the meeting of the State Society last spring, and have carefully read it myself in the Transactions. I have been fully convinced that the doctrine therein set forth is correct, and I *had* believed you had done the profession of the State a favor, and had resolved even to adopt it as a rule of action at our last term of court, but was subpœnaed without being called. It appears, however, that you have got two men at least in jail, as you will see by the enclosed slip from the *Cincinnati Commercial* of this date. Doctors Dills and Buchman are members of the Allen County Medical Society, and have no doubt founded their actions in this case upon their faith in your teaching. We are all interested in the case, and I hope they will have the support of the entire profession in this matter. My object in sending you this notice is to call your attention specially to it, and to express the hope that you will give the case your attention, ascertain all the facts relating thereto, and make them the subject of a paper at your next stated meeting.

"Respectfully,

"WILLIAM COMMONS."

The enclosure was a slip from the *Cincinnati Commercial* of same date containing telegram from Fort Wayne, Indiana, relative to the commitment of Doctors Dills and Buchman, for refusing to testify as experts, without compensation first paid or assumed. Not having the honor of a personal acquaintance with either of the prisoners, I immediately addressed Dr. Joseph R. Beck, of Fort Wayne, for the facts in the case, and by return mail received copies of the *Fort Wayne Sentinel*, and a private communication from Dr. Thomas J. Dills, which papers gave me full accounts of the interesting proceedings. The following true copy of the mittimus recites all the facts in the case up to the commitment of Dr. Dills, and needs no preliminary statement:

"STATE OF INDIANA, ALLEN COUNTY, SS.

"THE STATE OF INDIANA TO CHARLES A. MUNSON, ESQ.,

"*Sheriff of Allen County, greeting:*

"Whereas, at the October term, A. D. 1877, of the Allen Criminal Circuit Court, begun, continued and held at the court house in the city of

Fort Wayne, county and State aforesaid, before the Honorable James W. Borden, judge of said court, and at the November session of said court, on the sixteenth day of November, the same being the twenty-third judicial day of said term of said court, the following proceedings were had, to-wit:

"*State of Indiana* v. *Thomas J. Dills.* Contempt of Court.

"Thomas J. Dills, M. D., a physician and surgeon, having been duly subpœnaed to testify in behalf of the defendant, one Robert Hamilton, who had been indicted and charged, and was then on trial before the court and jury for an alleged rape on one Catherine Warstler, and having appeared and been duly sworn, testified to questions propounded to him, as follows: 'That he was a practicing physician and surgeon in the city of Fort Wayne, in Allen county, Indiana; that he was a graduate of the Medical College of Michigan, at Ann Arbor, and that since he has graduated he had attended medical lectures in the city of New York,' when the following further question was propounded to him, the said Thomas J. Dills, by the counsel for the defendant, viz: 'State whether or not in case of female menstruation and toward the termination of the period, there is sometime a retention of a portion of the menses.' To the answering of this question, or to further testifying in said case, the said Thomas J. Dills refused, and thereupon made the following statement to said court: 'I object to answering the question propounded by counsel for the defense, for the following reasons: 1. I did not offer my services here any more than I do my professional services elsewhere. I was sent for, and have come. My time and my skill are my capital, and I can not surrender them gratuitously to any but the poor, since it is by my professional opinions that I make my living. 2. There is a distinction between the case of a man who sees a fact and is called to prove it in a court of justice, and that of a man who is selected to give his opinion on a matter with which he is peculiarly conversant from the nature of his employment in life. The former is bound as a matter of public duty to speak to a fact which happens to have fallen within his knowledge; without such testimony the course of justice would be stopped; the latter is under no such obligation. For the above reasons I respectfully decline to give the opinion of an expert in the case now pending, except upon the payment of my fees in advance.'

"Thereupon the said witness, Dills, appeared by counsel, and the question was fully argued before said court as to whether said witness was compelled under the circumstances to give his evidence in said case of *The*

State of Indiana v. *Robert Hamilton;* and the court being sufficiently advised in the premises, do order and adjudge that said witness answer said question, and thereupon said Dills, having peremptorily refused to answer said question, on motion of defendant's counsel it is ordered, adjudged, and decreed that said Thomas J. Dills be committed to the custody of the sheriff of Allen county, and that he be confined in the jail of said county until he shall consent to testify in said case and answer said question, or until discharged by due course of law.

"You are, therefore, hereby commanded, in the name of the State of Indiana, to take into your custody the said Thomas J. Dills, and there safely keep in the jail of said county of Allen until he shall consent to testify and give evidence in a certain case now pending and on trial in said Allen Criminal Circuit Court between the State of Indiana and one Robert Hamilton, and to answer all legal and proper questions propounded to him in said case, and for so doing this shall be your sufficient warrant. In witness whereof, I have hereunto set my hand and the seal of said court this seventeenth day of November, A. D. 1877.

"[SEAL]. "F. H. WOLKE, Clerk."

Immediately after the close of the proceedings detailed in the mittimus and the issue of this command, Dr. Dills was taken by the sheriff to the jail of Allen county, and Alpheus P. Buchman was called by the counsel for the defendant in the same case at bar, and he deposed as follows, viz.: My name is Alpheus P. Buchman; I am a practicing physician; I have resided in Fort Wayne two years; I graduated at the College of Medicine and Surgery, of Cincinnati, Ohio, in 1870, and have practiced since that time.

The same question was then asked him that had before been submitted to Dr. Dills, which he likewise, and for like reasons, peremptorily declined to answer. Judge Borden immediately committed him for contempt, and he was taken to keep company with Dr. Dills.

Dr. Joseph R. Beck, another of the physicians of Fort Wayne, was next called to the stand, but before he had time to express his contempt for the court, the learned judge got sick of the business and adjourned his court (this was Saturday morning) until Monday afternoon, thus allowing Dr. Beck to escape.

The subsequent proceedings in the Fort Wayne courts were communicated to me by Dr. Dills in the letter before mentioned, a part of which he will excuse me for transcribing here:

"FORT WAYNE, IND., NOVEMBER 21, 1877.

"DR. W. HOBBS—*Dear Doctor:* * * * * We were sent to jail at 9:30 A. M. Counsel had already prepared the writ of *habeas corpus*, but it was not made returnable until 3 P. M. of the same day, at which time we were conducted by the sheriff from the prison to the room of the Superior Court, Judge Lowry on the bench, to whom the writ was returnable. The arguments of counsel in this court were much the same as had been heard in the Criminal Court below, the greatest reliance being placed upon the declaration that there were 'particular services within the meaning of the Bill of Rights.'

"After hearing the argument, Judge Lowry took the matter under advisement until Monday morning at 9 o'clock, at which time he read an elaborate opinion, in which he fully failed to distinguish between the nature of testimony as to facts, and of opinions of skill upon facts, thereby sustaining the action of the Criminal Court and adjudging us as in contempt. Counsel now advised us to go upon the witness stand and *testify under protest*, and thus purge ourselves from the alleged contempt. Their reasons were briefly these:

"1. The case was already a matter of record, the bill of exceptions made out, and ready to go up to the Supreme Court.

"2. The record will recite all the facts up to and including the return of the mittimus by the sheriff; and as we were then in the custody of the sheriff, so it would appear and claim the attention of the Supreme Court as quickly as would a *bona fide* case praying for a writ of *habeas corpus*.

"3. If again remanded for contempt, no writ, no process even from the Supreme Court, could reach us, as the statute expressly denies that remedy to all persons incarcerated for this offense.

"4. Arbitrary measures would prove positively injurious, and would probably be construed as an attempt to defeat the ends of justice.

"5. Should a suit for damages and false imprisonment ever be instituted, six hours imprisonment would present as strong claims for redress as six months.

"Acting upon this advice, and with the full consent of the medical gentlemen who stood in readiness to share our fate or fortune, we took the witness stand and answered the questions under protest. Two or three unimportant questions followed these, when the case closed and the prosecutor began his argument.

"During all this time the respectable members of the profession in and about this city boldly espoused our cause, and gave every evidence of unqualified approval, and letters and telegrams from prominent medical

gentlemen throughout the northern portion of the State fully assure us of their sympathy and hearty coöperation. Since I began this communication, our mutual friend, Dr. Beck, has handed me your letter of inquiry addressed to him.

"Allen County Medical Society held a special session last night, and took prompt action to espouse this cause in behalf of the profession of the State. They will present an appeal to the profession with a statement of the facts and ask support and coöperation to make it a common cause, as all have rights in common and a common interest in it. They appointed committees to draft resolutions to order out the transcript, employ counsel, etc. The whole matter will be in print in ten days, and copies sent to all the county medical societies and prominent professional gentlemen in the State and elsewhere. We sincerely trust that all who have the interest of the profession at heart, all who have been sufferers in that their time and professional opinions have been extorted from them under the whip and spur of arbitrary court custom, will heartily coöperate with us in our earnest endeavor to establish and maintain the honor and dignity of our profession.

"With high respect, I am yours truly,

"THOS. J. DILLS."

The following is the full text of the opinion of Judge Lowry, of the Superior Court of the city of Fort Wayne, as taken from the columns of the *Fort Wayne Daily Sentinel* of November 20, 1877, head lines and all, viz.:

"DILLS' DILEMMA — HE MUST EITHER BACK DOWN OR MOVE TO JAIL PERMANENTLY — JUDGE LOWRY HAVING DECIDED AGAINST HIM IN THE HABEAS CORPUS CASE — THE FULL TEXT OF THE OPINION WILL BE FOUND BELOW.

"This morning, when the Superior Court met, Judge Lowry read the following very able opinion in the Dills *habeas corpus* case:

"'In the matter of DR. THOMAS J. DILLS. *Habeas Corpus.*

"'A petition for a writ of *habeas corpus* was filed in this case, a writ ordered issued and served, return made thereto, and the body of the petitioner produced in court, and exceptions filed to the return. Upon the issue thus made two questions, it is assumed, arise, and have been discussed in argument. They are: First. Has this court authority to inquire into the legality of the process by which the petitioner is held in custody or

discharge him therefrom before the term of his commitment has expired? Second. Is such imprisonment illegal?

"'In order to subserve one of the purposes for which it is understood this writ has been sued out, and that what seems to be the expectations of counsel as to this point on both sides may be complied with, the latter question will be considered first. The inquiry involved under this head is in brief: Has a person called as an expert—in this case a physician—having in all other respects as to attendance as a witness, at the instance of the defendant, and answering all preliminary questions in a trial in the criminal court for felony, when called upon for his opinion upon a question of skill pertaining to his profession, a right to refuse to answer until provision is made for his compensation, either by the defendant or the court; or is he in such case guilty of contempt and subject to imprisonment?

"'That a witness, generally, who refuses to answer a question determined by the court to be proper, is in contempt, and subject therefor to imprisonment, is so elementary as to meet with universal recognition, and, of course, is not here attempted to be controverted. But it is insisted that an opinion on a question of skill is so far different from a statement of a fact, by reason of its having been necessary to expend time and thought and incur expense to qualify the witness to give the opinion, as that he has himself a special property in it, which he can not be compelled to part with; or, that to express it is to render a particular service, which he can not be compelled to render without compensation therefor, and that such compensation may be demanded in advance.

"'That this proposition is a novel one, is no reason why it should be ignored. The attitude in which the petitioner places himself seems not to have been rashly or inconsiderately taken. To what extent the impression prevails upon which his action is predicated is indicated by the fact that such ground was distinctly taken by a leading member of the learned profession to which the petitioner belongs in an address delivered at the recent meeting of the Indiana State Medical Association, from which some citations have been read in argument. Whether the point is mooted by reason of the view there taken, or by reason of an independent and honest sense of duty originating with the petitioner individually, it may be equally entitled to, and will be accorded here, respectful consideration.

"'If any such right to compensation, in addition to that provided for in the case of witnesses generally, exists, it must be in virtue of something peculiar to our constitution and laws in this country. In England "an additional compensation for loss of time was formerly allowed to medical

men and attorneys, but that rule is now exploded." Note 2 to § 310, 1 Greenleaf Ev.; citing *Lonergan* v. *The Royal Exchange Assurance*, 7 Bing. 725; *Collins* v. *Godefroy*, 1 B. & Ad. 950. And this distinction seemed to have had an existence only in civil cases. *Webb* v. *Page*, 1 Car. & Kir. 23, is cited in the same note to the effect that "there is a distinction between a witness to facts and a witness selected by a party to give his opinion on a subject with which he is peculiarly conversant from his employment in life. The former is bound, as a matter of public duty, to testify to facts within his knowledge. The latter is under no such obligation, and the party who selects him must pay him for his time before he is compelled to testify." It will be seen presently that this case must also have been treating of the rule then in force in civil cases. And the text of the same section cites stat. 5, Eliz. c. 9, as providing that in civil cases, in order to secure the attendance of a witness, it is requisite that he "have tendered to him according to his countenance or calling his reasonable charges," adding that "these expenses of a witness are allowed pursuant to a scale graduated according to his situation in life." The author then proceeds: "But in this country these reasonable expenses are settled by statutes at a fixed sum for each day's actual attendance, and for each mile traveled from the residence of the witness to the place of trial, without regard to the employment of the witness or his rank in life." In civil cases the fees provided for according to the English law had to be paid or tendered. Not so in criminal cases. There no tender of fees was in general necessary on the part of the government in order to compel its witnesses to attend. Indeed, at common law, there was no mode provided even for reimbursing witnesses their expenses in criminal cases. Roscoe Cr. Ev. 110. Provision has, since the period of time, ceased at which statutes passed in aid of the common law became a part of that law as adopted in this State, by which in England witnesses in most criminal cases get remuneration; but in no class of offenses has it been provided there that witnesses shall be entitled to payment or tender of fees before attending or testifying. Witnesses making default on the trial of criminal prosecutions are not exempt from attachment on the ground that their expenses were not tendered. 2 Russ. on Cr. 947; 2 Phill. Ev. 383. It is the common practice in criminal cases for the court to direct the witness to give his evidence, notwithstanding his demurrer on the ground that his expenses have not been paid. Stark Ev. 83 (a 12th ed.) And it has been repeatedly ruled at *nisi prius* since the enactment of English statutes providing for expenses that they were not demandable before testifying. Roscoe's Cr. Ev. 111 and authorities cited. And a witness there who

fails to attend on due service of subpœna, or refuses to testify, even though he be a peer of the realm, is subject to attachment, commitment, or indictment. *Rex* v. *Clement*, 4 B. & A. 233; 6 E. C. L; *Rex* v. *Lord Preston*, 1 Salk. 278; Bac. Abr. Courts, E. Nor have I been able to find any English case making a distinction in criminal prosecutions between witnesses testifying as to facts and those called as to questions of skill.

"'Such being the state of the common law, as to this question, up to and after the time when the body of that law, and the statutes passed in aid of it, was adopted as our own, what change, if any, has taken place with us? It is not claimed that the rights of witnesses, whether experts or others, have been enlarged by statute. How is it as to any constitutional provision? The Bill of Rights, Art. 1, Sec. 21, Const. Ind., provides that, "no man's particular services shall be demanded without just compensation. No man's property shall be taken by law without just compensation; nor, except in case of the State, without such compensation first assessed and tendered." When a witness is required simply to testify in a court of justice, it can not be said, in the sense of this provision, that his property is to be taken. He is not to be deprived or divested of any thing. If he have an opinion on the question in hand, it is not proposed to dislodge it or dispossess him of it, and transfer it to the enjoyment and dominion of some one else. It is proposed, simply, that he shall give it expression. To do this, it is necessary to set in motion the organs of speech. By their use he lays before the jury a statement of the laws appertaining to some department of nature, science, art, life, or business not within the common and general observation and knowledge of mankind. This knowledge he has, at some previous time, acquired through the use of his senses, by the impressions made upon them from without, and by classifying, arranging, and comparing those impressions, he has formed conclusions or opinions. He is now required to state what those opinions are; or, it may be, he is simply to state what the views of others of acknowledged authority are, as received and acknowledged by his profession, as he may have got those views from books or heard them from the platform. This is obviously, in either case, a "service" that he is required to render. It is not even some original combination of forces, or some new and grand invention of his own, that he is required to divulge. It is not a hereditament—corporeal or incorporeal—nor an easement connected therewith, nor a corporeal or incorporeal chattel. Is it "particular service" within the meaning of the constitution? As regards witnesses, generally, the question seems to be put at rest by *Israel* v. *The State*, 8 Ind., a case of felony, resulting in acquittal, where, on a motion to tax the costs of defendant's

witnesses to the State, under the constitutional provision quoted, the court says:

"'It is further contended that the court should have taxed the costs, under that provision of the constitution which declares that 'no man's particular services shall be demanded, without just compensation;' but we do not think so. The old constitution contained a like provision, but we believe it never was understood to extend to witnesses in criminal trials, and the provision in the new constitution should not be so understood. We do not propose to go into a discussion, with a view to a definition of 'particular services,' but we are prepared to say that the services of witnesses in criminal cases are not particular, but are of the class of general services which every man in the community is bound to render for the general, as well as his own individual, good. It is as much the duty and interest of every citizen to aid in prosecuting crime as it is to aid in subduing any domestic or foreign enemy; and, it is equally the interest and duty of every citizen to aid in furnishing to all, high and low, rich and poor, every facility for a fair and impartial trial, when accused—for none are exempt from liability to accusation and trial. These are matters of general interest and public concern; are vital, indeed, to the very existence of free government, and render the services of witnesses on such occasions matter of general public interest, and not particular, in the sense of the constitution."

"'But it is insisted that there is a marked distinction between the case of the general witness, and that of the specialist or expert called to give an opinion. *Webb* v. *Baird*, 6 Ind. 13, and *Gaston* v. *Board of Commissioners, etc.*, 3 Ind. 497, are relied upon to support this distinction, and secure the application of the constitutional provision to the case at bar. The court held, in the former case, that if a statute required the class of persons known as the legal profession to render a service, by defending a criminal gratuitously, which was not equally demandable of every other class, it would be in violation of the clause of the fundamental law which provides *for a uniform and equal rate of assessment and taxation upon all the citizens,* upon the ground that "the law which requires gratuitous services from a particular class, in effect imposes a tax to that extent upon that class." Not so, here. Persons in every pursuit of life, it may be safely said, are subject to be called as experts to speak in court on questions appertaining to the particular domain of life in which they are engaged. The wonders of astronomy, no less than the wonders of the human mechanism, might, in a given case, claim attention on the witness stand. Le Verrier, were he in our midst, would be subject, by its requirements, to

interruption in his measurements amongst the fixed stars; Tyndall to come forth from his laboratory, and yield up the combined fruits of his experience and his genius; or Huxley or Herbert Spencer to contribute from their treasures of philosophy whatever might be needed to shed light upon the pending controversy, and aid in enforcing the claims of justice or vindicating innocence. The President of the United States, and each member of his Cabinet who is a member of the bar, would be liable to be required to appear in a court of criminal jurisdiction in the District of Columbia, and give their opinions upon a question of skill as to what the common law of the States in which they respectively live is, upon any such point as it might become material to inquire concerning. The professions are all equally liable to pay, in this way, the common tribute they owe to the State or humanity. So of the merchant, the manufacturer, the banker, the artisan, the agriculturist, the mechanic, the mariner. Every employment in the world may have its shade of mystery or cunning, not known to mankind at large, which may need, betimes, to be explained by its particular followers. This is here, then, no particular burden imposed on a particular class; nor are the services required particular services not required of all alike, under similar circumstances. The case cited of *Gaston* v. *The Board, etc.*, before referred to, does not militate against this view. There the coroner called a jury to hold an inquest. He directed Dr. Gaston to make a *post mortem* examination. He did it, and for the service filed a claim. The court say: "We have no doubt that in a case where a *post mortem* is really necessary, the coroner may, by his employment, bind the county to the payment for a sufficiency of professional skill to make the examination. To that extent, at least, he must be the agent of the county," citing authority.

"'But the case last mentioned is also relied on by counsel for respondent. Here it seems to be quite in point. It is recited in the agreement, upon which the decision in the case was predicated, that at the *post mortem* Gaston was "sworn as a witness in the case, and testified to said jury as a witness, *and communicated to them the result of that examination, and his opinion of the means by which said Smithers* (the deceased) *came to his death.*" And the Supreme Court distinctly say: "He was entitled to no compensation for that service, so far as the traveling *and giving testimony in obedience to the subpœna were concerned, beyond that of an ordinary witness.* Physicians are not specially privileged in this particular."

"'And our State constitution further provides that "in all criminal prosecutions the accused shall have the right * * * * to have compulsory process for obtaining witnesses in his favor." Const., Art. 1, Sec.

13. It may be insisted that this means, only, that he shall have such process to bring them into court, but must pay them to their satisfaction, or the value of their opinion, before requiring them to testify, or that the State or county must do that for the defendant. We then turn to the statute, and find it enacted that "in all criminal cases where the party accused shall be acquitted, no costs shall be taxed against such person, nor against the State or county, for any services rendered in such prosecutions by any * * * * witness." 1 Ind. Stat. 481, § 44. That this provision is constitutional is so thoroughly settled that citation of the cases is uncalled for. Were I, therefore, at liberty to determine the imprisonment of the petitioner illegal and discharge him, such discharge would necessarily be refused. In my opinion, to have testified on the occasion in question, without fee or reward, was a duty incumbent upon the petitioner as a member of the medical profession, in common with that resting upon the votaries of every profession or calling found within the State; and upon his refusal so to do, there was no alternative for the court but to commit, and that, therefore, his detention is not wrongful or unlawful.

"'But, independently of this view of the matter, the petitioner must be remanded by reason of the view taken of the other question. The issuance of the writ itself, upon the case made by the petition, might well have been refused. I consented to defer the consideration of the point involved here until a return was had to the writ, upon the suggestion that there would then be authority produced to show that, upon the facts stated, the case is not within the provision of the *habeas corpus* act that "no court or judge shall inquire into the legality of any judgment or process, whereby the party is in custody, or discharge him when the term of commitment has not expired, in either of the following cases:" * * "Third. For any contempt of any court, officer, or body having authority to commit." The Criminal Court, unquestionably, has such authority. The case in 28 Ind. 241, *ex parte* Lawler, does not seem to be applicable to the case at bar. The statute imposing inhibtion upon this court as to declaring the imprisonment for contempt illegal, in my judgment clearly does apply.

"'Upon the whole, the petitioner must, therefor, be remanded to the custody of the sheriff.'

"In compliance with the decision of Judge Lowry, Dr. Dills gave his testimony in the rape trial this afternoon, and thus purged himself of contempt. Dr. Buchman was discharged from custody."

Allen County Medical Society very justly and with great magnanimity made these cases against Dr. Dills and Dr. Buchman its own cause and the cause of the profession of the State and country, and determined to

prosecute them to a final hearing. From every part of Indiana, and from almost every State in the Union, there came messages of encouragement to push them forward as the assertion of long delayed rights, and promises of such coöperation as might be needed. Most of the medical journals took notice of the cases, and asserted the evident title to the rights claimed.

As there were two cases at bar, twin in all respects except in the persons of the defendants, the Society at once employed the ablest counsel attainable for each, and at once set about the proceedings for a hearing at the earliest moment practicable by the Supreme Court of our State. The law firm of Combs, Morris & Bell, of Fort Wayne, was employed to conduct the case of Dr. Dills, and Hon. Robert Stratton, of same city, that of Dr. Buchman.

The profession are under very great obligations to these learned gentlemen for the interest they manifested in their work, and for the ability and excellence with which they presented the law to the high court.

While the uncertainty of success was weighing heavy upon us, anxious to have the honest opinion of counsel about our prospects, I wrote to Dr. Dills to learn, if possible, just what Judge Morris, as a lawyer, thought of it, and a few days afterward received the following communication, which he had received in return to his inquiries:

"FORT WAYNE, IND., December 11, 1877.

"DR. T. J. DILLS—*Dear Sir:* You ask me for my opinion as a lawyer upon the question involved in your appeal. At first, as I told you, my convictions as to the law, and the paramount necessity upon which I supposed it to rest, were against you. But this conviction has weakened as I have advanced with the examination of the subject, and I now feel quite convinced there is no controlling public necessity for the rule as held by Judge Lowry. I feel quite satisfied that the rule, as contended for by you, is compatible with the best interests and rights of society, and is but justice to your profession. * * * * * * * *

"Yours respectfully,

"JOHN MORRIS."

In the distribution of work before the court, the case of Dr. Dills was given to Justice Biddle for examination, and that of Dr. Buchman to Justice Worden. On the twenty-second of February, when the court met in session to make up its opinion in the cases, Justice Worden first presented his in the Buchman case, in which he fully sustains all that we claimed upon the witness stand, and in which the decisions of the courts below

were reversed. This was concurred in by Howk and Perkins, justices, which made a majority of the court. Biddle, C. J., and Niblack dissenting.

The opinion of Biddle in the case of Dills was adverse to the petitioner, but as there was only Niblack left to concur, it went in favor of the petitioner by the opinion already rendered in favor of Buchman.

The following is a certified copy of the opinion of Judge Worden, concurred in by Justices Howk and Perkins, and entered of record as the law in Indiana:

"THE STATE OF INDIANA,

"IN THE SUPREME COURT, NOVEMBER TERM, 1877.

"*On the twenty-second day of Februury*, 1878.

"HON. HORACE P. BIDDLE, Chief Justice.
"HON. WILLIAM E. NIBLACK,
"HON. GEORGE V. HOWK,
"HON. JAMES L. WORDEN,
"HON. SAMUEL E. PERKINS, } Judges.

"In the case of
"ALPHEUS B. BUCHMAN,
vs.
"THE STATE OF INDIANA. } *Appeal from the Allen Criminal Circuit Court.*

"Came the parties by their attorneys, and the court, being sufficiently advised in the premises, gave the following opinion and judgment, pronounced by WORDEN, J.:

"One Hamilton was on trial in the court below on an indictment charging him with the commission of a rape. On the trial he put upon the stand, as a witness, the appellant herein, Dr. Buchman, who testified as follows, upon questions propounded, as we suppose, viz.:

"'My name is A. B. Buchman; I am a practicing physician; I have resided in Ft. Wayne for two years; graduated at the College of Medicine and Surgery, of Cincinnati, Ohio, in 1870, and have practiced since that time.

"'*Question.* State to the jury whether or not in female menstruation, there is sometimes a partial retention of the menses after the main flow has ceased?

"'*Answer.* I refuse to answer the question unless I am reasonably compensated for it, before testifying as a medical expert; I do this with all respect to the court.

"'*Ques.* What is your opinion in case of menstruation in females, as to the menstrual flow changing in color, gradually from red or dark to a lighter shade?

"'*Ans.* The answer that I would have to give would depend upon my professional knowledge of the subject, and I respectfully refuse to give my professional opinion without being compensated.

"'*Ques.* To whom do you look for your pay?

"'*Ans.* I expect the party calling me shall compensate me, or that the court shall provide some means of compensation.'

"The court being of opinion that the witness was required by law to answer the questions without compensation other than ordinary witness fees, and the witness persisting in his refusal to answer, he was committed as for contempt. From the commitment the witness appeals to this court.

"The question presented being a novel one in Indiana, so far as we are advised, and an important one, we have bestowed such time and care upon its consideration as its importance seems to require. It must be, and is, conceded that a physician or surgeon, when called upon, must attend and testify to facts within his knowledge for the same compensation, in the way of fees, as any other witness. In respect to facts within his knowledge, he stands upon an equality, in reference to compensation, with all other witnesses. But the question presented is whether he can be compelled to give a professional opinion without compensation other than the ordinary fees of witnesses.

"In England there is some diversity in the decisions in respect to the question whether an attorney or medical man is entitled to higher compensation for attendance as a witness than ordinary witnesses. This diversity, however, relates to witnesses required to testify to facts, and not to give professional opinions. In respect to professional opinions we are not aware of any diversity of decision. In note 2 to § 310, 1 Greenl. Ev., 13th ed., it is said that 'an additional compensation for loss of time was formerly allowed to medical men and attorneys, but this rule is now exploded. But a reasonable compensation to a foreign witness, who refused to come without it, and whose attendance was essential in the cause, will in general be allowed and taxed against the losing party. See *Lonergan* v. *The Royal Exchange Assurance*, 7 Bing. 725; S. C. Td. 729;

Collins v. *Godefrey*, 1 B. & Ad. 950. There is also a distinction between a witness to facts and a witness selected by a party to give his opinion on a subject with which he is peculiarly conversant from his employment in life. The former is bound, as a matter of public duty, to testify to facts within his knowledge. The latter is under no such obligation; and the party who selects him must pay him for his time before he will be compelled to testify. *Webb* v. *Paige*, 1 Car. & Kir. 23.'

"The case of *Lonergan* v. *The Royal Exchange Assurance*, referred to in the above note, was not the case of a witness called to give a professional opinion; but the witness was a foreign sea captain, without whose presence the plaintiff's attorney 'deemed it unsafe to trust the trial of the cause to written depositions so long as he could prevail upon the captain to remain in England to give his evidence personally on the trial before the jury, inasmuch as the demeanor and manner of Captain Maffatt's giving his evidence before a jury might have great weight with a jury in addition to his intelligent and gentlemanly appearance.'

"Tindal, C. J., said, amongst other things: 'But the general rule has been that where witnesses attend under a subpœna, none receive any allowance for loss of time except medical men and attorneys. If that rule were to undergo revision, I can not say that it would stand the test of examination. There is no reason for assuming that the time of medical men and attorneys is more valuable than that of others whose livelihood depends on their own exertions. But that rule is not applicable to the case of a foreign witness who may refuse to attend if the terms he proposes are not acceded to. If he asks only what is reasonable, I can not see why it should not be allowed and be charged to the unsuccessful party.'

"The case which is supposed to have exploded the rule that attorneys and medical men are to have additional compensation for loss of time is that of *Collins* v. *Godefrey*, cited in the above note. In that case Collins sued Godefrey, to recover a remuneration for plaintiff's loss of time in attending as a witness under a subpœna, issued by Godefrey in a case in which Godfrey was a party. The plaintiff attended six days as a witness, but was not called upon to give his evidence.

"Lord Tenterden, C. J., said: If it be a duty imposed by law upon a party, regularly subpœnaed, to attend from time to time to give his evidence, then a promise to give him any remuneration for loss of time incurred in such attendance is a promise without consideration. We think such a duty is imposed by law, and on consideration of the statute of Elizabeth, and of the cases which have been decided on the subject,

we are all of opinion that a party can not maintain an action for compensation for loss of time in attending a trial as a witness.

"'We are aware of the practice which has prevailed in certain cases, of allowing as costs, between party and party, so much per day for the attendance of professional men, but that practice can not alter the law. What the effect of our decision may be is not for our consideration. We think, on principle, that an action does not lie for a compensation to a witness for loss of time in attendance under a subpœna.'

"But, notwithstanding the case above noticed, the rule allowing professional men additional compensation was followed in England as late as 1862. In the case of *Parkinson* v. *Atkinson*, 31 L. J. N. S. 199, the Master had allowed the expenses of an attorney who was called as a witness, but who did not give professional evidence, on the higher scale allowed to professional witnesses. On motion for a rule to show cause why the taxation should not be reviewed, Erde, C. J., said: 'We do not approve of the rule which is said to prevail in criminal cases, that if a surgeon is called to give evidence, not of a professional character, that he is only to have the expenses of an ordinary witness. We think the Master was quite right in allowing the expenses of this witness on the higher scale.'

"So, also, in the case of *Turner* v. *Turner*, jurist, 1859, p. 839, the Master allowed one Marcus Turner, a barrister of London, one pound and a shilling a day for attendance as a witness. The Vice Chancellor said: 'The right of a professional man to £1 1s. per day was founded on the fact of his being abstracted from his functions. It was unnecessary to say what classes came within the definition "professional man," but there was no doubt that a barrister did; and if subpœnaed as a witness, he had a right to receive the remuneration, small and scanty as it was.'

"The motion to vary the taxation was overruled.

"The forgoing cases, however, do not decide the point involved here; and they have been noticed rather with a view of showing that they are not in conflict with the right claimed by the appellant than as establishing that right. We come now to authorities more directly in point.

"The case of *Webb* v. *Paige*, cited in the above note from Greenl. Ev., decided in 1843, was an action for the negligence in carrying goods. A witness was called for the plaintiff to speak to the nature of the damages sustained by the goods, consisting of cabinet work, and the expense that would be necessary to restore or replace the injured articles. The witness demanded compensation, and Maule, J., in deciding the point raised, used the language set out in the latter part of the note above cited from

Greenleaf. The witness, upon receiving an undertaking for his pay, was examined. This is the only English case that bears directly upon the point of which we have any knowledge. The American cases are not numerous, and we proceed to notice such as there are.

"In the matter of *Rœlker*, Sprague, 276, during a trial upon an indictment, the district attorney moved for a capias to bring in a witness who had been subpœnaed to testify as an interpreter. But Sprague, J., said 'that a similar question had heretofore arisen as to experts, and he had declined to issue process to arrest in such cases. When a person has knowledge of any fact pertinent to an issue to be tried, he may be compelled to attend as a witness. But to compel a person to attend because he is accomplished in a particular science, art, or profession, would subject the same individual to be called upon in every case in which any question in his department of knowledge is to be solved. Thus the most eminent physician might be compelled, merely for the ordinary witness fees, to attend from the remotest part of the district, and give his opinion in every trial in which a medical question should arise. This is so unreasonable that nothing but necessity can justify it. The case of an interpreter is analogous to that of an expert. It is not necessary to say what the court would do if it appeared that no other interpreter could be obtained by reasonable effort. Such a case is not made as the foundation of the motion. It is well known that there are in Boston many native Germans and others skilled in both the German and English languages, some of whom it may be presumed might, without difficulty, be induced to attend *for an adequate compensation.*'

"In the case of *The People* v. *Montgomery*, 13 Abb. Prac. Rep. N. S. 207, * * * Montgomery was indicted for murder. The district attorney had procured the attendance of Dr. Hammond as a witness to testify professionally in the cause, who was paid, or to be paid, the sum of five hundred dollars for his attendance and services as such witness. This was complained of as an irregularity. The court said, E. D. Smith, P. J., delivering the opinion: 'We do not see that the calling of Dr. Hammond as a witness, and the payment to him of a sufficient sum to secure his attendance at the court during the trial, was in any respect an irregularity, or did any wrong to the petitioner. It seems to us that the district attorney was acting in the line of his duty as public prosecutor, in securing the attendance of a proper medical witness of high repute, to meet the distinguished medical experts which he knew the prisoner expected to call on his side. * * * The district attorney, it is true, might have required the attendance of Dr. Hammond on subpœna; but that would

not have sufficed to qualify him to testify as an expert, with clearness and certainty, upon the question involved. He would have met the requirements of the subpœna if he had appeared in court when he was required to testify, and given proper impromptu answers to such questions as might then have been put to him in behalf of the people. He could not have been required, under process of subpœna, to examine the case and *to have used his skill and knowledge to enable him to give an opinion upon any points of the case*, nor to have attended during the whole trial and attentively considered, and carefully heard, all the testimony given on both sides, in order to qualify him to give a deliberate opinion upon such testimony as an expert in respect to the question of the sanity of the prisoner. Professional witnesses, I suppose, are more or less paid for their time and services and expenses, when called as experts in important cases, in all parts of the country.'

"These cases go far to establish the position contended for by the appellant. But on the other hand, the case *ex parte* Dement, decided by the Supreme Court of Alabama, and reported in *The Reporter*, January 30, 1878, p. 138, decides that a physician or surgeon may be compelled to testify as an expert, where the testimony is relevant to a cause pending before a judicial tribunal, without being paid as for a professional opinion.

"Having thus considered the cases that have come under our notice, bearing on the subject, it may be well to look at the works of text writers, for they furnish, at least, some evidence of what the law is. In 1 Tayler's Med. Jur., p. 19, it is said that 'Before being sworn to deliver his evidence a medical or scientific witness may claim the payment of his customary fees, unless an arrangement has already been made between him and the solicitors who have sent him a subpœna. These fees are generally made matter of private arrangement between the witness and the attorney.' This clearly implies that he is to be paid his customary fees for an opinion, and that he may demand payment before delivering his evidence. But we doubt whether he could make the demand before being sworn, for he might be called upon to prove some fact within his knowledge.

"In the Jurisprudence of Medicine, in its relations to the law of contracts, torts, and evidence, by John Ordronaux, Par. 114, 115, it is said: 'But once put upon the stand as a skilled witness, his (the physician's) obligation to the public now ceases, and he stands in the position of any professional man consulted in relation to a subject on which his opinion is sought. It is evident that the skill and professional experience of a man are so far his individual capital and property that he can not be compelled to bestow it gratuitously upon any party. Neither the public, any more than

a private person, have a right to extort services from him in the line of his profession without adequate compensation. On the witness stand, precisely as in his office, his opinions may be given or withheld at pleasure; for a skilled witness can not be compelled to give an opinion, nor be committed for contempt if he refuse to do so. * * * As the result of the foregoing conclusions it may be said, that a witness who is called in an action to depose to a matter of opinion, depending on his skill in a particular trade, has, before he is examined, a right to demand, from the party calling him, a compensation for his services; for there is a wide distinction between a witness thus called and a witness who is called to depose to facts which he saw.'

"Then follows the remarks of Maule, J., in the case of *Webb* v. *Paige*, which have already appeared in this opinion.

"In 2 Phil. Ev., 4 Am. Ed., p. 828, it is said: 'With respect to compensation for loss of time, the general rule is that it ought not to be allowed; though some compensation has been usually allowed to medical men and attorneys, but not to others. And there seems to be a reasonable distinction between the case of a witness called upon to depose to a fact and one who is called to speak to matter of opinion, depending on his skill in a particular profession or trade; the former is bound, as a matter of public duty, to speak to the fact which has occurred within his knowledge; but the latter is under no such obligation, and is selected by the party to give his opinion merely; and he is entitled, therefore, to demand a compensation for loss of time.'

"In 1 Red. on Wills, note 46 to pl. 31, page 154–5, the author says the following propositions may be of interest:

"'1. It is clear that experts are not obliged to give testimony upon mere speculative grounds, and where they have no personal knowledge of the *facts* in the case. If they have had personal knowledge of the testator, it may fairly be regarded as amounting to the knowledge of facts. But unless that is the case, a medical witness is not obliged to obey the ordinary witness subpœna, and will not be held in contempt for disobeying it. This has been so ruled at *nisi prius* in England within the last few years.

"'2. The expert is not obliged to examine books and precedents with a view to qualify himself to give testimony; nor, is he obliged to examine into the facts of cases, by personal inspection of individuals, whose state may be the subject of controversy in courts.

"'3.' It being purely matter of conventional arrangement between professional experts and those who desire to employ them as witnesses,

both in regard to their acting as such, and also their making preparation to enable them to give such testimony, it virtually places the price of such testimony on the market; and its price is likely to range, somewhat, according to its ability to aid one or other of the parties litigant. The tendency of this is to render it partizan and one-sided, as a general thing.'

"Judge Redfield in no manner dissents from the above propositions as legal ones, but suggests, not that experts are not entitled to be paid, but that the law should be so changed 'that this class of witnesses should be selected by the court, and that this should be done wholly independent of any nomination, recommendation, or interference of the parties, as much so, to all intents, as are the jurors. To this end, therefore, the compensation of scientific experts should be fixed by statute or by the court, and paid out of the public treasury, and either charged to the expense of the trial, as part of the costs of the cause, or not—as the legislature should deem the wisest policy.'

"Iowa has legislated upon the subject, so that the court is to fix the compensation with reference to the time employed, and the degree of learning or skill required. *Snyder* v. *Iowa City*, 40 Iowa, 646.

"These elementary authorities, and the cases of *Webb* v. *Paige*, *The People* vs. *Montgomery*, and in the matter of *Rœlker*, *supra*, clearly and unmistakably point to the conclusion that the appellant was not bound to give his professional opinion without having been paid therefor.

"It would seem on general principles, that the knowledge and learning of a physician should be regarded as his property, which ought not to be extorted from him, in the form of opinions, without just compensation. It was said by this court, of an attorney, in the case of *Webb* v. *Baird*, 6 Ind. 13, 'To the attorney, his profession is his means of livelihood. His legal knowledge is his capital stock.' The property which an attorney or physician may have in his professional knowledge, if it is to be regarded in the light of property, may not be of a tangible corporeal character; it may be neither goods or chattels, lands or tenements; but it may, nevertheless, be property. A party who has a copyright in a book, has a *property*, which consists, not in the right to the book merely, but in the exclusive right of multiplying copies thereof. 2 Cooley's Blackf. 405; Curtis on Copyright, 13; Copinger's Law of Copyright, 1. Note A.

"The question has been considered thus far only upon general principles of law. We proceed now to test it by the constitution of the State. Section 21 of the Bill of Rights provides that 'No man's particular services shall be demanded without just compensation.'

"In *Israel* v. *The State*, 8 Ind. 467, it was held that the services of wit-

nesses in criminal cases were not 'particular services' within the meaning of the constitution. This is conceded. Witnesses who know anything of a case, however high or low, rich or poor, learned or unlearned, they may be, or whether occupying public or private stations in life, all stand upon an equality in this respect, and must attend as witnesses without other compensation than that provided by law. This is a burden that falls upon all alike. The witnesses are bound to attend, and, in the language of some of the authorities before cited, speak to the facts which have occurred within their knowledge. But the court decides nothing upon the point here involved. The case of *Blythe* v. *The State*, 4 Ind. 525, however, is exactly in point in principle.

"There Blythe, an attorney of the court, was appointed to defend a pauper on the charge of larceny. Blythe denied the right of the State, or the court, to demand his professional services without compensation, and refused to act. For this refusal the court adjudged him guilty of contempt.

"This court held, under the provision of the constitution above set out, that he was not bound to perform the service. In *Webb* v. *Baird*, 6 Ind. 13, Baird had been appointed to defend a pauper on a criminal charge, and had performed the service; and the question involved was whether he was entitled to compensation from the county. Judge Stuart said, in delivering the opinion of the court, 'that any class should be paid for their particular services in empty honors, is an obsolete idea belonging to another age, and a state of society hostile to liberty and equal rights. * * To the attorney, his profession is his means of livelihood. His legal knowledge is his capital stock. His professional services are no more at the mercy of the public, as to remuneration, than are the goods of the merchant, or the crops of the farmer, or the wares of the mechanic. The law which requires gratuitous services of a particular class, in effect imposes a tax to that extent upon such class—clearly a violation of the fundamental law, which provides for a uniform and equal rate of assessment and taxation upon all the citizens.'

"But if the professional services of a lawyer can not be required in a civil or criminal case without compensation, how can the professional services of a physician be thus required? Is not his medical knowledge his capital stock? Are his professional services more at the mercy of the public than the services of a lawyer? When a physician testifies as an expert, by giving his opinion, he is performing a strictly professional service. To be sure, he performs that service under the sanction of an oath; so does the lawyer when he performs any service in a cause. The position of a medical witness testifying as an expert, is much more like that of

a lawyer than that of an ordinary witness testifying to facts. The purpose of his service is not to prove facts in the cause, but to aid the court or jury in arriving at a proper conclusion from facts otherwise proved. Is not this also the province and business of an attorney? And are not services of each equally 'particular?' All attempts to make a difference in the two cases are but losing sight of the substance and grasping at the shadow.

"If physicians or surgeons can be compelled to render professional services, by giving their opinions on the trial of criminal causes, without compensation, then an eminent physician or surgeon may be compelled to go to any part of the State, at any and all times, to render such services without other compensation than such as he may recover, as ordinary witness fees, from the defendant in the prosecution, depending upon his conviction and ability to pay. This, under the general principles of law and the constitution of the State, he can not be compelled to do. If he knows facts pertinent to the case to be tried, he must attend and testify as any other witness. In respect to facts within his knowledge, his qualifications as a physician or surgeon are entirely unimportant. In respect to facts, as before stated, he stands upon an equality with all other witnesses; and the law, as well as his duty to the public, requires him to attend and testify for such fees as the legislature have provided. Not so, however, in respect to his professional opinions. In giving them he is performing a 'particular' service, which can not be demanded of him without compensation. The thirteenth section of the Bill of Rights provides that in all criminal prosecutions the accused shall have the right to have compulsory process for obtaining witnesses in his favor.

"This provision has no bearing upon the question involved. The term 'witnesses,' as thus used, was used in its ordinary sense, as embracing those who know, or are supposed to know, some fact or facts pertinent to the cause. But the physician or surgeon, when giving his professional opinion in a court, does not, as before stated, occupy the position of a witness testifying to facts. He performs the service under oath, to be sure, and this is the only circumstance from which he can be called a witness at all. So the judge upon the bench, the lawyer at the bar, and the jury in the jury-box, all perform their services under oath.

"It is unnecessary to determine in this case, whether all classes of experts can require payment before giving their opinions as such It is sufficient to say that physicians and surgeons, whose opinions are valuable to them as the source of their income and livelihood, can not be compelled to perform service by giving such opinions in a court of justice without such payment.

"The appellant could not have been legally required to answer the questions propounded to him without compensation, and his commitment for contempt was erroneous.

"The judgment below is reversed, and the cause remanded.

"NOTE.—Biddle, C. J., and Niblack, J., dissent from the foregoing opinion on grounds stated by Biddle, C. J., in the case of *Dills* v. *The State.*

"It is therefore considered by the court that the judgment of the court below in the above entitled cause, be in all things reversed."

It will certainly not be improper for me to say here that the profession are under very great obligations to Judge Worden, not for having rendered the law correctly, as we believe, but for the laboriously, careful, extensive and conscientious consideration and inquiry by which he arrived at the opinion, and fortified it by reference to all knowledge known upon the subject. The approaches which he has made to the several conclusions which underlie the objective point of the inquiry are easily apprehended, and the great truth at the end is distinctly seen and understood after he has exposed the fact that a medical expert is not a witness in the proper sense of the term, and only like one, in that he gives his opinions under oath, as do the judge and jury also, that the purpose of his service is not to prove facts in the cause, but like an attorney, to aid the court or jury in arriving at a proper conclusion from facts otherwise proved. This being determined is quite as just that the one should be *employed* and *paid* for his professional service as that the other, and that compulsory service from either would be equally and alike unjust.

A noticeable point in all these recent court proceedings is the evident surprise with which bar and courts have at first heard the announcement of our claims. Judge Lowry says: "The proposition is a novel one," but "the attitude in which the petitioner places himself seems not to have been rashly or inconsiderately taken. To what extent the impression prevails upon which his action is predicated, is indicated by the fact that such ground was distinctly taken by a leading member of the learned profession to which the petitioner belongs, in an address delivered at the recent session of the Indiana State Medical Society, from which some citations have been read in argument."

Judge Worden says: "The question presented being a novel one in Indiana, so far as we are advised, and an important one, we have bestowed such time and care upon its consideration as its importance seemed to require."

Judge Morris, in his brief, says: "These questions have at least the merit of novelty in this State. We are not aware that outside of Allen county they have been passed upon by any Indiana court." Hon. Mr. Stratton, in his brief, takes occasion to assure the court that his client, Dr. Buchman, is playing no joke upon their honors.

This evident lack of information upon this subject by the members of the legal profession, high and low, has arisen from the fact that we have not given them occasion to inquire into the law. They are well aware that their own professional services have property values which are, under the ruling of the courts, protected from compulsory and unpaid seizure; but that the honorable profession of medicine stands beside them, with equal and the same rights and immunities, we had not asked them to consider. We had tamely submitted to the exactions of courts, without asserting our right; and so long has this been continued, and so quietly borne, that there was no need to inquire into the matter. Hence, the state at what was in us thought audacity upon the assertions of our claims to justice, and the very evident suspicion and distaste with which the law, as rendered, has been received by many members of the bar.

An interesting feature in this decision will be found in the fact, that it plants itself upon the twenty-first section of the Bill of Rights, which says: "No man's particular services shall be demanded without just compensation. No man's property shall be taken by law without just compensation," etc., and pronounces that the services of a medical expert are "particular" within the meaning of this section, and that his professional opinions are property in the sense of the same. This places the opinion beyond the reach of the legislature.

The only question before the Supreme Court in these cases, was this: Is a *medical expert* in contempt who refuses to answer questions before being paid for his opinions, as for professional service? The answer returned is, that he can not. But this answer is purposely restrained from application to any class of experts but physicians and surgeons. Two other questions closely related to the above, present themselves to me, neither of which were before the court, but both of which were discussed by the authorities cited by Judge Worden:

1. If the party is certainly assured that he has no knowledge of facts pertaining to the cause in action, but is called only as an expert, will he be held in contempt of court should he disobey the order to attend?

2. Can the expert maintain a demand for compensation on the "higher scale" for the time consumed in attendance, in proportion to its value to him in his professional business, besides the fee allowed him for his opinion?

The "Medical Witness" of last year held that the expert and the common witness were alike obliged to answer the subpœna by attendance, but all the authorites cited by Judge Worden, which bear upon this question, indicate a different conclusion. In the matter of *Roelker*, in the District Court of the United States for Massachusetts, before referred to, the district attorney moved for a capias to bring in a Dutchman who had been subpœnaed to testify as an interpreter. But Judge Sprague said: "A similar question had heretofore arisen as to experts, and he had declined to issue process to arrest in such cases. When a person has knowledge of a fact pertinent to an issue to be tried, he may be compelled to attend as a witness; but to compel a person to attend because he is accomplished in a particular science, art, or profession, would subject the same individual to be called in every case in which any question in his department of knowledge is to be solved."

In Redfield on Wills, note 44, to pl. 31, pp. 154–5, it is said: "It is clear that experts are not obliged to give testimony upon mere speculative grounds, and when they have no personal knowledge of the facts in the case. But unless this is the case, a medical witness is not obliged to obey the ordinary witness subpœna, and will not be held in contempt for disobeying it. This has been so ruled at *nisi prius* in England within the last few years."

In *Betts* v. *Clifford* (1858) the late Lord Campbell said, in answer to a question, "that a scientific witness was not bound to attend upon being served with a subpœna, and that he ought not to be subpœnaed." 1 Taylor, 16.

The case of *Dr. Gaston* v. *The Board of Commissioners of Marion County*, reported in 6 Indiana, would seem to be against this view of the question; but a careful analysis will show that it has little, if any, bearing upon the point. Space will not allow me to show why this is so.

Prof. W. J. Conklin, of Dayton, Ohio, in a late paper entitled "The Medical Expert," discusses this question at some length; and after the citation of much authority, all of which is in keeping with the view here taken, concludes thus: "However, it is but right to say that the weight of authority is in favor of the power of the court to compel the bodily presence of the witness; it certainly seems scarcely right that the witness should have the power of deciding upon the necessity of his attendance when duly subpœnaed." (Med. Expert, p. 15.)*

*A paper read before the Montgomery County Medical Society, Dayton, Ohio; published in the Ohio Medical and Surgical Journal, and reprinted in pamphlet. It is certainly the best résumé of knowledge on this subject that has fallen under my notice.

He thus gives up the whole question by the declaration that the "weight of authority" is against it; and adds to the weight of his authority, in the statement that "it certainly seems scarcely right that the witness should have the power of deciding upon the necessity of his attendance when duly summoned." (Loc. cit.)

The other question: should the medical expert be allowed to recover from the party calling him, for the time spent in attendance upon court, in proportion to its value to him in his professional business, carries the weight of much authority in England and America. See *Lonergan* v. *Royal Exchange Assurance Company*, 7 Bing. 725, S. C. *id* 729; *Collins* v. *Godefrey*, 1. B. & Ad., 950; *Webb* v. *Paige*, 1 Car. &. Kir. 23, etc.

Time and opportunity have not allowed me to examine either of these questions sufficiently to give a satisfactory opinion upon them. There is no doubt that where the mind of the court does not fully recognize the just distinction between the common witness and the expert, no discrimination would be made in favor of the latter; but under the clear declaration of our Supreme Court that the medical expert is not a witness, and only resembles a witness in the fact that he performs his duty under oath, it is scarcely possible that he would be denied the privilege of making or refusing the engagement, and of recovery for such services and time as may be required of him such compensation as they would be worth to him elsewhere in his business.

Our rights as medical experts will not be fully secured to us until we are allowed compensation for our service in the courts as for professional business; such, that the estimate shall include the time detained from other business, the distance traveled, the expense incurred, and the worth of the opinion.

We can scarcely expect so much as this until the term *witness* is dropped from the language of the law, as applied to one called to explain facts proved in a case. Judge Worden declares the true doctrine when he says: "When a physician or surgeon testifies by giving his professional opinion, he is performing a *strictly professional service.* * * The position of a medical witness testifying as an expert, is much more like that of a lawyer than that of an ordinary witness testifying to facts. The purpose of his service is not to prove the facts in the cause, but to aid the court or jury in arriving at a proper conclusion from facts otherwise proved. Is not this also the province and business of an attorney? Are not the services of each equally particular? All attempts to make a difference in the two cases are but losing sight of the substance and grasping at the shadow. * * * * But the physician or surgeon, when giving his professional

opinion in a court, does not, as above stated, occupy the position of a witness testifying to facts. He performs the service under oath, to be sure, and this is the only circumstance from which he can be called a witness at all. So the judge upon the bench, the lawyer at the bar, and the jury in the box, all perform their service under oath."

This clear and correct exposition of the functions of an expert makes him no witness at all, and it is a misnomer which alike confuses counsel, judges and law writers to apply a common name to things so widely distinct. To personate by a common name two characters so widely separated in all their functions, is great fallacy. When each personal is distinguished by a term designating his special function, there will be no longer any ambiguity in the authority upon this subject. One who has not given this matter attention, can scarcely realize the difficulty in a safe and satisfactory interpretation of court opinions and authorities in law, from the continual blending of these two characters in the general term witness. This was what led Judge Lowry astray, as it did also Judge Manning in the Alabama case. Let him who is called to give opinions on facts proved be simply called an *expert*, *adviser*, or something else, but never a witness, and then without disturbing the common obligation of all alike as witnesses to facts, the professional office and character of him who is skilled in such knowledge as is needed in the determination of causes in action, will appear in his true professional character without challenge. The declaration of Judge Worden that the distinction between the functions of the professional services of a lawyer, and of a physician or surgeon, in a court of justice, is a distinction without a difference, leads me to say that the difference between a common witness and an expert, is a difference without a distinction. When the distinction is clearly made, the difference will be as that between things unlike. Had the term "witness" not been applied to experts, it is not probable that any party to an action in court would ever have thought to secure the services of a physician in court, upon other terms than those upon which he employs his professional services elsewhere, or hires an attorney.

The importance of the opinion rendered by our Supreme Court can not be over-estimated. Some appreciation of this may be attained by a consideration of the interest taken in these proceedings by the profession all over the country. The medical journals in every part of the land have published the facts, and each has added its stock of encouragement to the petitioners and argument to the justice of the claim. Editors of journals, professors in medical colleges, and men of all grades of prominence and respectability in the profession, east, west, north, and south, have sent in

their share of encouragement and assurance of all necessary coöperation to stand by and sustain the prosecution of this trial test for the right to success or to the end. The opinion of Judge Worden, while it is law only in Indiana, will do very much to make law elsewhere, as it will shed light and authority upon every court in the world. Hence, while authoritatively it settles our rights only, it will do very much as a precedent, as also by the clearness of the argument which accompanies it, to establish the law elsewhere.

My apology for this particular account of proceedings herein related is not merely to publish the opinion of our Supreme Court. I am impressed with the conviction that we are not yet secure in this attainment. We need not be surprised to hear much objection to this ruling. Already complaint has reached me. Lawyers who have given the matter no study, see no reason for it, and declare that it will soon be overruled. Some astute ones are certain the next legislature will, by statute, undo the whole business, unmindful of the fact that the constitution, joined in hand with the Supreme Court, is above the work of politicians. The people will scout class favoritism in it; and especially will this be suggested by the increased expense of such litigation as needs the aid of medicine and surgery. Hence, we can not be too well informed at all points relating to these questions that we may give the law the support which it deserves and may need until fortified by practice and ruling elsewhere, and thus secures a firm footing in the jurisprudence of the country. It is not expected that the present Supreme Bench will change the judgment rendered, but another Pharaoh may come up who may not know this Joseph.

INFANTILE CONVULSIONS.

WHAT SHOULD BE THE TREATMENT DURING THE PAROXYSM?

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A few years ago there lived a farmer, whom we will call Shonar, about three miles from the city—this refers to the city of Richmond, but every city in the State has the congener of Mr. Shonar—who was industrious and intelligent, raised fine crops and spastic babies, and was prosperous. One baby was particularly obnoxious to convulsions; and such notoriety was given to each attack, by one means or another, and especially by sending a messenger flying on horseback for the doctor, that the residents along the road to town, when they heard, day or night, unusual clatter of horses' feet on the pike would exclaim, one to another, "Shonar's baby has another fit."

The family physician of the Shonars, Dr. X., graduated just forty-five years ago, and was, at the time he graduated, fairly imbued with the pathological doctrines of that day, and embraced the lines of practice then in vogue, and retained the same, with small modification, throughout his life. The theory of the pathology of infantile convulsions then held was that the spasms were due to congestion of the brain, and the treatment instituted was with a view of lessening that congestion, or at least to prevent it doing fatal mischief to the contents of the cranium.

Condie's Treatise on the Diseases of Children was issued a few years after the period referred to, and may be taken as a fair exemplar of the best medical opinion of its time. This author says: "During the paroxysm it has been supposed, by some, that little or nothing can be done toward averting it. This, however, is an error; and, if generally acted upon, would prove, in many instances, a very serious one." To obviate

this serious error he recommends bleeding from the arm, division of the temporal arteries, opening a jugular vein, leeches, cups, calomel, castor oil, senna, turpentine, enemata of various kinds, cold sponging of the head, warm pediluvies, sinapisms, cold douche, emetics, etc.

Dr. X.'s advice to the Shonars was to send post-haste for him, when baby was seized with a fit; and, meanwhile, immerse it in a warm bath, apply cold to its head, and, if opportunity offered, plaster it with sinapisms. All this the Shonars did, and more—at the instance of anxious and officious neighbors, who thronged the house—and the fit was always ended before Dr. X. arrived, notwithstanding the rapid clatter of the horse's feet that bore the messenger to summon him; and, therefore, he had no opportunity to practice the sanguinary and heroic measures prescribed by Condie for the relief of the spasm, which it was his intention to do had he arrived in time.

Treatment of infantile convulsions during the spastic paroxysm is one thing; treatment of the morbid condition out of which the convulsions arise is another, and a widely different, thing. It is a few weeks since the treatment of the spastic paroxysm was discussed in a medical society, with half a hundred doctors in attendance, the question having been presented by the writer of this paper in an essay advocating the abstaining from all interference with a child in an ordinary fit that did not continue over half an hour, except to lay the victim on a bed, in a quiet, well ventilated room, of proper temperature, and loosen all bands and tight clothes about him. Several of the physicians present on that occasion took part in the debate, only one of whom fully, and one partially, sanctioned the treatment set forth in the paper. Another speaker declared, quite decidedly, that calomel was the one thing needful in such cases; but he did not inform us how it was to be administered while the child was insensible, in spasms and totally unable to swallow. Another doctor detailed a case where violent convulsions in a child were excited, he was absolutely certain, by beans that it had eaten sometime before, and the rational treatment was to dislodge the beans from the stomach by an emetic, but the child could not swallow, and an enema of ipecac did not produce emesis; so he put the child's feet in water hot enough to blister them, which, as he averred, arrested the spasm for the time; but in the night, after the doctor had gone home, the fits returned, and the child died, carrying with it the alleged beans and the real blisters to its little grave. The result could not have been worse had no pedal blisters been created. We may charitably hope that the patient did not recover sufficient consciousness to realize how epipastically it had been doctored. Still another doctor advocated the

exhibition of chloroform by inhalation to children in spasms, even advising that the anesthetic be left with the mother, to be administered by her, as instructed by the doctor, if occasion demanded it in his absence. He assured us that a practitioner of medicine would have no professional standing in his neighborhood, who failed to use chloroform in infantile convulsions. It certainly has the appearance of a rash and hazardous proceeding to leave so powerful an agent as chloroform in the hands of a distracted mother to be administered by her, in her own discretion, to her own child, while she is under the conviction that it is in the very portals of death.

It was the contrariety of opinions so dogmatically asserted at the meeting just referred to, that was the moving cause to present the same subject to the consideration of this assembly.

The right is always worth pursuing for its own sake, but it is doubly important to seek it when human weal is the reward of success, and human suffering the fruit of failure. Although most likely medical science will never be exact, it is positively certain that it is constantly advancing, and its attainments at any given time must be the foundation of the best medical practice at that time, so it logically follows. And while we should not depart from the medical art of our forefathers, simply because it is old, we should be derelict if we fail to adopt new art processes in medicine when demanded by our advance in the knowledge of the science of medicine over what our ancestors had attained therein.

Already, herein, have been quoted the words of Condie concerning the necessity of prompt and active treatment of the paroxysm of infantile convulsions, and the various measures he recommended have, also, been recited. They seem heroic and imposing, but may be taken as fairly ensampling the treatment of his time, based on the theory that the efficient cause of the spasms was congestion or hyperemia of the brain. With the conviction that this old theory of the pathology of the disorder was erroneous there came the conclusion that the treatment founded thereon was not right, and the later authors have given a very mild, almost negative, treatment. No American writer has been met with who has abandoned the old notion of treatment; but Tanner, in his work on the Diseases of Infancy and Childhood, instructs in these words, viz: "During the fit it will be advisable to avoid all unnecessary interference, it being generally sufficient to loosen the clothes about the neck, chest and waist, to raise the head, sprinkle the face with water, and to admit plenty of fresh air."

Nothnagel, in Ziemssen's Cyclopedia of the Practice of Medicine, recommends in this language, viz: "In children we should guard against

officiousness; it will be necessary to interfere only when affairs take a threatening turn. Of course we are not to expect that a spasm of the glottis, already existing in the seizure itself, can be arrested by enemata with musk or assafœtida, or by mustard plasters. Still, if a persistent fit, with symptoms of hyperemia of the brain, has followed upon repeated attacks, after the analogy of the status epilepticus, we may try active measures of this kind, and also, according to the circumstances, irritating enemata or even local abstraction of blood." Enemata of bromide of potassium have been much praised, but their virtue has not yet been established.

If the phenomena of the fit in a child, of the kind under consideration, be carefully observed, the following will be found to be their character and order of sequence, viz.: the face will become pale, and there is no reason to doubt that consciousness is lost at the same moment; a tonic spasm seizes many muscles; those of respiration, which suspends breathing; those of the eyes, with unequal force, which keeps the lids open and rolls the balls outward and upward symmetrically; those of the face and neck, which draws the head toward the same side that the eye-balls roll; and those of the whole system of flexors and extensors, producing rigidity of the body. In a few moments the tonic gives place to the clonic spasm, first about the head and chest, and speedily over the entire body; the eyes snap, the head jerks, the chest has short, sharp movements of limited expansion and contraction that, without aerating the blood, churns the mucus of the mouth and larynx into ropy froth; meanwhile the blood is passing freely through the lungs unoxygenated as in other cases of asphyxia, and the left heart is sending it in full measure into the arteries, but its venous character is a barrier to its free passage through the systemic capillaries, and it banks up in the arteries, changing the pale anemic condition of the surface that characterized the outset of the attack to a dark, congested, cyanotic hue; in from say one to thirty minutes the convulsive actions lose their vigor, soften down, and presently cease; the little patient takes a long inspiration; the eyelids close and a coma, resembling a deep sleep, sets in, during which the systemic capillaries slowly pass the retarded venous blood, which, hurrying back through the right heart, now finds the revivifying oxygen in the lungs, receiving which, and yielding up accumulated carbonic acid, the blood is sent forward into the arteries to spur up and complete the restoration of the normal circulation; the coma continues for an indefinite period—it may be minutes, it may be hours—and then the paroxysm of the infantile convulsion, and its immediate phenomena, are ended.

While these are presented as the leading features of a typical fit of a child, it is not pretended that all infantile convulsions are precisely of this character. It is not denied, even, that the first step may be a hyperemia of the brain, evidenced by a flushed and hot face, instead of the described anemia of the brain declared by the pale face and integuments of the head, because the ultimate effects of certain degrees of hyperemia and anemia may be the same on the brain, just as the ultimate effects of certain degrees of heat and cold may be the same when applied to sundry parts of the body. It is only intended to assert that as a fact established by clinical observation, in my own experience as well as in others, the rule is that infantile convulsions grow out of anemia of the brain just as epileptic convulsions at any time of life grow out of anemia of the brain. The aim at this moment is to call attention, pointedly, to the fact that the infantile convulsion now under consideration has a natural history, which, when understood, shows it to be a self-limited disorder of short duration, that goes through its several stages with as much regularity as does the small-pox or any other specific disease. And this is the course, and these are the phenomena, of these spastic seizures, whether they arise from indigestible food in the stomach, abnormal teething, the advent of fever, emotional excitement or traumatic pain, the exciting cause having little to do in modifying the fit, and as little in determining the appropriate management.

It is not within the purview of this dissertation to go further into the pathology of these fits, nor to study the pathological condition of the nerve centers which underlies the diversified phenomena that a paroxysm presents. What it is desired to do here is to claim the thoughtful attention of practitioners to the fact that this variety of infantile convulsions has an orderly development and decline which they can not interfere with to any advantage by any kind of perturbatory treatment, and that, on the contrary, such treatment may do mischief. Let it be sharply noticed that the general treatment of infantile convulsions is not now under discussion, the point presented in this paper is distinctly the management of the paroxysm of acute infantile convulsions, and this particular part of the therapeutics of the disorder is given such prominence and special attention for two reasons, viz: First, because it is believed that no active treatment can avail to any good end, but on the contrary may do harm by physical injury to the little patient in his unconscious condition, or add additional disturbance to the nervous centers already seriously affected by the exciting cause of the spasm; and, secondly, because a clear, guiding and controlling knowledge in the medical attendant of what should be done, will abolish the apparent fright and real skurry of the physician that usually

follows his summons to a child in a fit, and this more rational state of the doctor will speedily work a most desirable influence in calming the emotions and restraining the actions of the parents and attendants of the patients. By order of Dr. X., the Shonars, when baby was seized with a fit, rushed frantically to the preparation of hot water, mustard plasters, and the like, under the terror of a conviction that any delinquency in this behalf might permit an avoidable fatal result. Have we not all been witnesses of the agony of a mother of a convulsed child, and the demonstrative grief of the other relatives and attendants lest something may be omitted which being done would insure the safety of the sufferer, and left undone may bring death, never for a moment apprehending that doing too much, or doing the wrong thing, is vastly more likely to be mischievous than leaving the patient to the hazard of nature. If Dr. X. had himself felt the force of the position, and had assured Mrs. Shonar that the thing to do when her child had a seizure, was to loosen its clothes, lay it on a bed in a quiet ventilated room of proper temperature, endeavor to prevent it injuring its tongue, and send for him as she would in any ordinary acute disease, impressing on her, at the same time, that there was comparatively small danger during the fit, and what danger there was could best be obviated by pursuing the course directed, what a world of suffering suspense and agonizing terror he would have saved that anxious mother! And if it be true that we can thus rightfully lighten the burden of maternity, and soften the distress of social existence, how imperative is the obligation to do so; and to omit such duty, or fail therein through lack of knowledge, would be an offense to civilization, a dishonor to science, and a disgrace to the medical profession.

Nor let it be iterated, as has lately been said, that no mother can be induced, by a doctor or other authority, to sit inactively by her ailing child while it goes through the harrowing struggles and sickening distortions of a convulsive fit. He knows little of human nature, and nothing of maternal courage and fortitude, who asserts that a mother will not do this, or more, for her darling child, when the doctor, in whom she has full faith, bids her do it, with the injunction that it is the one thing needful. Have we not all seen, time and time again, the mother, who had been most active and untiring when her offspring had an acute fit, sitting quietly and in sorrowing passiveness by another child undergoing the horrible distortions that mark the advanced stage of meningeal inflammation? And this diversity of manner in the mother was solely due to the teaching of her medical adviser, or, in his absence, to popular notions derived from other doctors. In the acute case her doctor had inspired her with his own

conviction that active measures were imperatively demanded, while in the chronic form even himself had been taught, and the teaching confirmed by inexorable experience, that all efforts to arrest the convulsive fit were futile, and the result of this teaching the doctor had infused into the mother, and it controlled her conduct as well as his own.

No, let us fully recognize and appreciate the truth that whatever ideas the laity have of the practice of medicine, in the case under consideration, as well as in general morbid activities, has been acquired from the teachings of medical men, so-called, of some caste or class, and the still more important truth that whenever good doctors preach and practice sound science and true art, the laity will, it may be slowly or it may be rapidly, but with certainty, adopt the former and cling to the latter.

As an appropriate concluding of this essay, let it be reiterated that during the paroxysms of acute infantile convulsions, arising from whatever cause, and that do not continue over thirty minutes, the proper management is to lay the child on a bed in a well ventilated room, of suitable temperature, loosen its clothes, and endeavor to prevent injury to its tongue, if it have teeth, by inserting between its teeth a cylinder of cotton cloth rolled into the similitude of a cigar.

CONSERVATIVE SURGERY.

ILLUSTRATED BY NOTES OF SOME CASES IN PRIVATE PRACTICE.

L. HUMPHREYS, M. D., SOUTH BEND, IND.

Case First.—In August, 1858, George B., aged about 14, came to my office with a "buzz-saw wound of the right thumb," and an urgent request that it be "cut off." The saw had passed diagonally through the distal joint, and half way, longitudinally, along the body of the phalangeal bone, the end of the thumb being down and doubled upon itself; the soft parts were much lacerated, as well as the bony structure. The spiculæ of bone were carefully removed, the torn integuments excised; and, as there appeared to be vascular supply sufficient to prevent gangrene and sloughing, the parts were carefully co-apted and *fixed* by proper dressings. Union progressed rapidly, and after inflammation subsided, passive motion of the joint was easily practiced. I did not see the patient after termination of the treatment (he having removed to what is now Colorado), for a period of ten years, when, on meeting him, he held up his right hand, with the remark: "That thumb is as good as it ever was; I can write, and do any thing with it, the same as before it was injured—and I owe its preservation to you." This was only a case of *minor* surgery, yet it was a triumph of conservatism, self-evident, to all who know the value of a right thumb.

Case Second.—John Rupel, a wealthy farmer, residing on Sumption's Prairie, St. Joseph county, Indiana, aged 64, was, on the twelfth of July, 1861, thrown in front of the sickle of a McCormick reaping machine, drawn by four horses, in the act of "running away." One of the sickle guards, shaped like a drag tooth, with a beak-like curve, was driven between the tibia and fibula of the left leg, four or five inches above the

tibio-tarsal articulation. The lateral motion of the sickle tooth comminuted both bones extensively from the point of entrance to the ankle joint. The soft parts were, also, severely torn and lacerated, and the foot was turned inward at an angle with the leg. Dr. T. R. Brown, a very reputable medical gentleman, residing near the patient, had charge of him, and with whom I attended the case in consultation. A careful examination indicated that the circulation was sufficient to supply the parts beyond the seat of injury. The *shock* to the patient was severe, and we decided not to amputate then. We removed most all of the fragments of both bones, about four inches in length, above the ankle joint, preserving the periosteum where it could be done, excised the lacerated soft parts, dressed the wounds with adhesive strips and a many-tailed bandage, and placed the limb posteriorily, in a curved splint with foot-rest attached; creasote water was used as a local application (this was before the introduction of carbolic acid). Reaction and a high degree of constitutional disturbance ensued. Suppuration was profuse, and a severe drain upon the patient's vitality. He was given quinine, iron, stimulants, anodynes, and a generous diet. The patient and his family, and many of their neighbors, were importunate that the leg should be amputated. The medical attendants were quite as decided that they would not be driven into this extreme measure, as long as there was hope of saving the foot and leg. From want of proper care on the part of the nurses, at one time pretty good-sized larvæ got into the wound. The patient had a tardy recovery, the wounds healed finally, and in about ninety days he was on crutches; these were in time exchanged for a cane, and now, at the age of 84 years, he walks very comfortably without the aid of even a cane. The ankle joint is anchylosed, and there is two and a half inches shortening of the limb. This is compensated for by a high-heeled and thick-soled boot or shoe. The old gentleman has frequently bestowed benisons upon his surgical attendants for sparing his foot and leg.

Case Third.—June thirteenth, 1874, I was called in consultation to see John Rupp, a middle aged man, a floor sweeper in the Singer Sewing Machine Manufactory at South Bend, Indiana. While engaged in plying his broom he struck the back part of his left elbow against the teeth of a large circular saw, while in rapid motion. The soft parts were extensively lacerated, the olecranon process of the ulna, the round head of the radius and both condyles of the humerus were comminuted, a strip from the posterior and external surface of the ulna was split off from the shaft, about five inches in length by one and one-fourth inches wide, resembling an unfinished bone paper cutter. The muscles and blood vessels upon the

anterior aspect of the arm and forearm were intact. The attending surgeon was prepared to amputate above the elbow. At my suggestion it was decided to resect the elbow. The soft parts attached to the fragmentary portions of the bone were dissected away, the ends of the bone turned out, a wooden spatula placed under them, and with an amputating and a finger saw they were removed. The wound was dressed and the limb placed in angular splints. Extensive suppuration followed, with considerable constitutional disturbance. The wounds of the soft parts healed kindly. The contraction of the muscles coapted the endsof the bones; the limb is quite useful, can not flex the arm at the elbow without the aid of the other hand, but he can lift and carry with his left hand, such a weight as a bucket of water, etc. As soon as the patient was sufficiently recovered, he resumed his place in the factory as a floor sweeper, where he was injured, and is so employed at the present time.

Case Fourth.—November twelfth, 1874, George Brown, aged 30, farmer, residing six miles from South Bend, while hunting ducks in a boat, upon a tributary of the Kankakee river, by accident received a full charge of duck shot in the heel of his right foot, when about three feet distant from the muzzle of the gun. The inner half of the os calcis, a portion of the internal cuneiform bone and part of the metatarsal bones of the great toe and the next adjoining, together with the soft tissues, in the left half of the bottom of the foot, as far forward as the first phalanges of the toes named, were carried away. The deep fossa, ground out of the bottom of the foot, nearly three inches wide, had been filled with "soot" and ashes before I saw the case, to prevent hemorrhage. The wound was sponged clean, the spiculæ and broken cell structure of the bones and some shot were removed; the articulating fragmentary ends of the internal cuneiform and the metatarsal bones were dissected out; the edges of the wounded soft parts were approximated to within two inches by adhesive strips, and the foot loosely bandaged; warm water dressings were first used, until reaction took place, after which carbolized cold water was substituted. A few days subsequent, Dr. ———, who has quite a local reputation as a surgeon, and was surgeon of an Indiana regiment during the late war of the Rebellion, saw the case with me, and was of the opinion that it would be necessary to amputate the leg at the lower third. The probable length of time that would be required, and the tardiness in healing the wound, and the possibility of ultimate amputation, were presented to the consideration of the patient. He decided to be governed by my opinion, desired the foot saved if possible, and expressed a willingness to wait for results, however long this might be. The wound filled up with granulations in

about two and a half months; portions of necrosed bone were removed from time to time. Occasionally small abscesses appeared in the location of the wound, upon the top and sides of the foot, from which offensive matter was discharged, indicating the presence of dead bone.

The constitutional treatment throughout was supporting in character. This condition continued "off and on" until December 13, 1875, nearly thirteen months from the date of the injury, when, aided by the assistance of Dr. G. V. Voorhees of this city, we proceeded to explore the openings at different points of the foot, and detected, by probe, necrosis of portions of all of the cuneiform bones. A free incision was made through the soft part on the inside of the foot, over the distal end of the internal cuneiform bone, and with a chisel and gouge portions of necrosed bone were removed from all of the cuneiform bones, together with several shot. An aperture of about an inch and a quarter in diameter was made so nearly through the foot, transversely, that the point of a director could be felt through the integuments on the opposite side. This opening was packed tightly with oakum, which was cleaned every two or three days. Portions of necrosed bone were brought out by the threads of oakum, the first two or three times the changes were made. The wound healed from the bottom as the plugs of oakum were reduced in size, and finally closed without further trouble. Crutches were first used by the patient, then canes, and now he walks very comfortably without the aid of either. There is very little "halt or limp" in his gait; he has partial anchylosis of the ankle joint, and slight eversion of the foot. Mr. Brown now attends to his ordinary duties upon his farm, and his condition is certainly better than a stump and artificial limb could be.

Case Fifth.—October 4, 1876, Mike McCormack, aged about 25, brakeman on the Lake Shore and Michigan Southern Railway, while coupling cars after dark, caught his right foot in the "frog" of a railroad switch, and was thrown down by a car truck. Both bones of the leg at the tibio-tarsal articulation were crushed. An extensive laceration of the soft tissues was produced; the foot was turned inward at a right angle with the leg; the muscles of the calf were severely bruised and torn; there was, also, an oblique fracture of the thigh upon the same side just below the great trochanter. The wounds were properly dressed. After re-action had taken place, the limb was placed in a concave splint, and the foot kept in proper position by sand bags. No extension could be applied to keep in co-aptation the fractured femur, from the mangled condition of the ankle. The patient was fully apprized of the probabilities of losing his leg, and that at best great shortening of the limb and anchylosis of the

ankle must result. Profuse suppuration of the wounds, and sloughing of the contused muscles of the ankle ensued. The wounds healed readily, and the fracture of the thigh united—the fragments of bone overlapping. In December following he was out upon crutches, and he now walks with a cane and an iron foot rest under the bottom of the shoe. The ankle-joint is anchylosed; the shortening of the limb is about three inches, and the muscles of the thigh and leg are considerably atrophied; but the man is greatly better off than with an artificial limb.

Case Sixth.—Reed Mallory, aged 21, brakeman on the Lake Shore & Michigan Southern Railway, on December twenty-first, 1877, while climbing a ladder in the night, upon a freight car, slipped and fell while the train was in motion. Both legs were injured by a car truck; the right sustained a fracture of the fibula at the lower third, and opposite the same point a crescent shaped section of the tibia was cut out on its anterior aspect, about three inches in length and one-third the diameter of the bone in depth. The left leg sustained the severest injury—a wound upon the instep over the articulation of the tibia with the astragalus; a lacerated wound of the soft tissues three inches above the external malleolus and below this wound, an inch and a half in length of the fibula was cut out, rendering it necessary to dissect and remove the lower extremity of the bone. There was also a deep wound upon the bottom of the foot, parallel with and two inches in length under the anterior end and a little to the right of the center of the os calcis. Crepitus could be distinctly felt in the ankle-joint, which was much swollen and broadened at the time of the first examination; external manipulation indicated serious comminution of the tarsal bones. The wounds were dressed and both legs placed in fracture boxes. The parts were kept enveloped with oakum, and a free use of carbolized water made upon the wounds. The usual suppuration followed; in six weeks the fracture of the right fibula united, and the cavity in the tibia was partly filled by granulations, and covered by integument. The right ankle-joint is partially anchylosed. The swelling and suppuration of the left foot and ankle were more marked than the right. In the fourth week after the receipt of the injury, a bone protruded through the wound in the bottom of the foot that was slightly movable. Upon the projecting surface of this bone were grooves and elevations like those upon the upper articulating surface of the astragalus. The wound over and above the external malleolus filled up and nearly closed. Through this opening, and the one upon the instep, a probe detected by contact the rough surface of denuded or necrosed bone. The patient and his parents refused assent to an amputation of the limb. In waiting it

was hoped that the protruding bone in the bottom of the foot would become less firm in its attachments. In the latter part of March last the patient had an attack of intermittent fever, to which he had been subject last fall. He became somewhat anemic, and lost his appetite. After the fever was controlled, appetite restored, and general strength improved, he expressed a desire to have the leg amputated rather than wait longer for removal of fragments and necrosed bones.

In this request Dr. Voorhees, Dayton, and myself, readily acquiesced, and on the fifth of April last proceeded to amputate at the lower third. The stump healed kindly, and is a good one for an artificial limb. The right ankle from use is recovering from partial anchylosis by breaking up of any adhesions that exist in the muscles and tendons about the seat of the injury. On dissecting the amputated portion of the limb the tibia was found to have sustained a nearly transverse fracture three inches above its articulation with the astragalus. The lower fragment was not fully detached from the main shaft at the seat of the fracture, but was thrown backward and to the right of the astragalus and the concave surface of the inside of the os calsis and down through the wound in the bottom of the foot. The fractured end of the shaft of the tibia rested upon the upper articular surface of the astragalus, and the latter had become considerably crooked by contact with the upper fragment of the tibia. The partial dislocation of the lower fragment of the tibia was produced in part by the removal of the lower portion of the fibula from the external malleolus before described, thus depriving the foot of the support given by the fibula. It is barely possible that the removal of the fragmentary end of the tibia might have resulted in the preservation of a foot that would have been in some degree useful. The patient has no regrets at the loss of time in waiting—he had the benefit of the doubts and facts that no afterthought will harass him, that his foot "might have been" saved. If this report of a few cases, crudely expressed, to which many more could have been added, occurring in private practice, based upon an experience of over thirty-six years, will be the means of inducing any member of the profession to more conservatism in what should ever be the *dernier ressort, amputation*, my object will have been fully attained. I could have added to this paper largely, from personal observations in the service of nearly five years in the late war of the Rebellion, during the early years of which, there was a lamentable want of conservative surgery, especially in the field and field hospitals. But this paper is, perhaps, extended beyond profitable limits.

In conclusion, I think it may be safely stated that the profession of sur-

gery, prior to the last twenty years, was tardy in learning and fully appreciating the conservative resources of animal organisms in efforts at recovery from the effects of disease and wounds. Great advances have been made in this country within the two last decades in saving by timely and judicious interference, and patient waiting for the reparative efforts of nature, instead of a hasty resort to amputation and excisions. The temptation for surgeons to resort to extreme measures is unquestionably very great when called upon to treat cases of badly fractured and mangled limbs, especially where joints are involved, instead of conservative measures, by various appliances and operations other than amputation, patient waiting, watching for results. The surgeon in private practice, as a general thing, who promptly resorts to amputation, adds greatly more to his reputation in the estimation of the public (who always regard an amputation as something *heroic*), than if he saved a limb by means that tax his patience, ingenuity and skill vastly more than an amputation. A stump soon heals, and all responsibility and care are quickly disposed of. Not so in resection, the removal of necrosed and carious bone, the devising and application of proper dressings and appliances. A careful investigation demonstrates the gratifying truth that, within the time stated, American surgeons have more than kept pace in all the improved and successful methods in orthopedic surgery and treatment of diseases and injuries of bones and joints. Amongst the many American surgeons who have achieved distinction for our country and themselves, to Dr. L. A. Sayre, of New York, belongs unquestionably a position in the front rank, in originality of methods, skillful and ingenious devising of appropriate apparatus, and bold, conservative operations in the specialties named.

REPORT OF PUBLIC HYGIENE IN INDIANA.

BY THAD. M. STEVENS, M. D., INDIANAPOLIS.*

In conformity with a plan, I issued certain questions relating to the public health of the State, and during the last winter sent these questions to each county of the State. To those questions I have received answers from the following gentlemen:

Dr. Waterman, Indianapolis; Dr. Munford, Princeton; Dr. Willien, Terre Haute; Dr. Sharrer, Rockfield; Dr. Fields, Jeffersonville; Dr. Patton, Vincennes; Dr. Mavity, Kokomo; Dr. Wickersham, Anderson; Dr. Ayres, Ft. Wayne; Dr. Moore, Poolsville; Dr. Porter, Lebanon; Dr. Cook, Pendleton; Dr. Irwing, Crawfordsville; Dr. Rogers, Madison; Dr. Hibberd, Richmond; Dr. Howard, Hazelton; Dr. Wedington, Jonesboro; Dr. Moffitt, Rushville; Dr. Knapp, Ferdinand; Dr. Stillwell, Brownstown, and one gentleman failing to sign his name to the report, I am unable to give credit to. The following is a copy of the questions sent:

"1. What is the character of the soil in your county? What the geological formation?

"2. At what depth do you find good water?

"3. What are the principal sources of water supply—wells or cisterns?

"4. Do you consider that the water from the wells has ever been the cause or carrier of disease?

"5. Do you ascribe any case of sickness to bad dwelling sites, to impure cellars, or too much moisture or want of drainage?

"6. What per centage of disease do you place as preventable?

"7. What epidemics have you had during the last six years?

*Chairman of Committee on State Board of Health.

"8. What diseases in the country do you attribute to 'filth?' and what are your views, from observation, as to the agency of filth in producing disease, or does it act simply as a nidus for specific germs?

"9. What has been the change of type of diseases, and to what cause do you ascribe such changes?

"10. Do you think the country, as well as the cities, need a State Board of Health?

"11. What local influences control or modify public health?

"12. Are certain diseases increasing or otherwise? and from what cause?

"13. Give any facts relating to ventilation, drainage, etc., coming from your observation or experience?

"14. What, in your county, would be the value of a record of births, marriages, deaths, and a collection of "Vital Statistics" in general?

"15. What are some of the hindrances in having your people favor a State Board of Health?

"16. Are you located in a city, village or country?

"17. Is any process of filtration or purification adopted with the water supply?

"18. How near is the well to the privy?

"19. Has the water been offensive in taste or odor? If so, at what time and from what cause?

"20. What effect, if any, do pipes of wood, metal, etc., have upon the water?

"21. Has there been any analysis of any potable water?

"22. Have you any malarial disease traceable to soil saturation?

"23. Any other facts relating to public health that may suggest themselves to you.

"24. Report facts relating to Meteorology."

The object of this movement, no doubt, is understood by all. First, it shows to us the opinion of representatives of the State upon subjects presented. Second, the amount of intelligence of those as to such subjects; and, third, it we hope will inspire all in prosecuting inquiry and gaining useful information upon a branch of knowledge that we can not longer

ignore. The answers to the questions were as follows: As to the first question, we sum up the information gained through this source together with facts otherwise obtained.

The State of Indiana has a length of 250 miles and a breadth of 150 miles; area, 33,804 square miles, and contains about 21,637,760 acres. It is embraced between 37° 4′ and 42° north latitude, 7° 45′ and 11° west longitude. North of 40° it is in general level and well wooded, with the exception of several prairies in the extreme north and northwest. South it is hilly or rolling; a belt of bluff or knobs occupy the counties skirting the Ohio, and reaching up in spurs to the extent of one-fourth the State. Along the river courses are more or less extensive alluvial bottom lands. The prairies of the north are of those usually designated as high, low, swampy and alluvial. In the northwestern portion, embracing parts of Parke and Newton counties, are very extensive swamps. The nature of soil is, in general, north, sand and clay, with sand predominating, with rich alluvial bottom land along the river courses; west, in the vicinity of Vincennes and Terre Haute, upon the Wabash, the soil is sandy, without much admixture of clay; in nearly all cases, however, the subsoil is clay; in a small portion we find rock or shale immediately beneath the surface soil. In the center of the State, in the vicinity of Indianapolis, clay soil predominates, and in all the central and northern portion, indeed until the vicinity of the southern knobs is reached, the usual heterogeneous admixture of the glacial or drift predominating, with patches of alluvial, sandy or clay soil, or a mixture of such with gravel, bowlders, pockets of sand and vegetable remains.

In the extreme south, along the Ohio river, the "drift" formation thins out until it entirely disappears and gives place to the Devonian and Lower Silurian. In Brown and adjacent counties, where one spur of the Ohio "knobs" extends, we find the limit of the former glacial action. These "knobs," acting as a partial barrier to glacial advance, the "drift," however, is found extending down the valley, and even slight and scattered traces of such formation are found in the northern parts of the counties skirting the Ohio.

The thickness of the "drift" formation in different parts of the State varies; at Michigan City 172 feet, South Bend 103 feet, Elkhart 125 feet, Fort Wayne 88 feet, Indianapolis 80 to 90 feet, and in Vermillion and adjacent counties 110 to 125 feet, with alluvial 70 to 80 feet. In the southeast portion we have "drift" from 30 to 40 feet deep resting upon Upper Silurian and Devonian formation. In Clay, Greene, and neighboring counties, drift, coal measures, millstone grist, and subcarbonifer-

ous limestone; in Vermillion, Warren, Fountain, and Putnam counties, the subcarboniferous limestone predominates; in Jefferson and adjacent river counties, we find no drift, or only a trace. Alluvial two to ten feet deep with Devonian and Upper and Lower Silurian formation.

The principal rivers in the State are the Ohio on the south border, White river with the east and west forks, Wabash, with St. Joseph and St. Mary as head waters. The trend of the whole State, except the southeast portion that drains into the White river and adjacent small streams, is to the southwest, unless it be in the vicinity of Lake Michigan. As has been indicated by the depths of "drift," the highest portion of the State above the level of the sea or lake is in the neighborhood of Elkhart county—the Wabash running upon a summit level that gradually slopes south. Between the east and west forks of White river is a "backbone" ridge or elevation, with "knobs" or hills.

The yearly mean temperature of Ft. Wayne is about 65° to 68°, the same as at Providence, Harrisburg, Pittsburg, Salt Lake and Vancouvers. The summer mean is found to be the same as a line starting at New York, then deflecting south by the mountains to a point on latitude of Nashville, Tenn., then north to Columbus, Ohio, Des Moines, Helena, Salt Lake, and Salem, Oregon. The winter mean the same as New York, south to latitude of Washington, north to Cheyenne, Salt Lake and Vancouvers. The direction of the storms that visit us are in a majority of cases from the northwest—sometimes they strike the State from the west and southwest, having swept south from Nebraska, etc. Scarcely any rain storms occur but come from the North Pacific, through British America, and so south and east. The mean annual rainfall at Indianapolis for seven years, from 1865 to 1872, inclusive, 43.60 inches; in 1876 it was 53.56 inches, with 179 rainy days. The mean of snow for the seven years mentioned, was 19.72 inches.

Second Question.—In the north, where the "drift" is of the greatest thickness, the average depths at which good water is found is placed at from twenty to twenty-five feet; south, at from eighteen to twenty feet; but if pure water is expected they go from forty-eight to fifty feet, and this is in accordance with my observations at Indianapolis, for here we have three streams of water flowing beneath the city from the northeast to the southwest.

Third Question.—Wells are placed as the principal sources of supply in all cases, and only by two or three are cisterns mentioned as partial sources. When we consider that wells, with their open mouths and sides, are unavoidably (as now universally built) the receptacles of foul and poisoned

surface water from house and barnyard, and that they drain on an average an area of one hundred feet of soil adjoining, besides the fact before mentioned, of their striking the first or impure stream of water, to say nothing of their being a place of deposit for rats, bugs, worms, etc., we may from such facts form an idea of their drainage and insanitary qualities. There ought to be filtration, yet the people in their ignorance will never do this until they are not only alarmed, but shown a remedy; they will continue to rely upon the habit of "well-cleaning," supposing that thus they indeed "purify" the water that each day they quaff and that each day passes through their bodies, as through a sewer ladened with at least *unpleasant* filth.

Fourth Question.—Many answer they have not observed deleterious effects from such source; upon the other hand some reply positively in the affirmative. When we take into consideration the general apathy of physicians—or rather their inability, from want of co-operation with their patient and the family—in properly investigating such questions, and also the general teaching of those who have made it their especial study, that diseases of various kinds are traced to the drinking water, we must look upon the negative statement above given with much allowance. That they have not observed such effect is certainly not to be taken in the least as proving their non-concurrence, even though the gentlemen were all physicians of acknowledged ability—their negative assertion, indeed, amounting only to an assertion of non-observation. The third, fourth, and fifth, in connection with the seventeenth, eighteenth, nineteenth, and twenty-first questions, show that no process of filtration is reported as used except in certain cases, viz: charcoal filters with cistern water; and, as we have seen, there are but few cisterns, and, I expect, but few of those have filters. The distances from the cess-pool or privy-vault are reported as various, some as near as twenty feet, some two hundred, but an average of from fifty to one hundred feet; thus we find the vault nearly always within the area drained by the wells, and, as we shall see, that the "ground bed" spoken of as being the natural filter does, only in a partial degree, purify water passing through it for such distance, we can appreciate the value of additional purification in all cases. Several have replied to the nineteenth question, "yes;" others "no;" but as there has been no analysis of drinking water reported, except a partial one by Dr. Rogers, of Madison, we must form the conclusion that it is unsafe to reply upon such reports, as any test of healthy purity. According to my expression, well water having no preceptible bad odor still shows, by the application of tests, the presence of oxidizable matter in all cases. Let us see what may be a remedy, both cheap and efficient.

There is no new principle involved, for it is merely a filter; nor is it new in application in this form; but it is not fully adapted, nor is its complete success as a remedy acknowledged. We have described it in an article, but will repeat it here in brief. The material to be used is "front" or soft brick. With these a vaulted chamber is formed, resting upon the bottom of the cistern. This chamber may be of from two to six barrels in capacity, the vault to be built arched at the top, similar in form to an old fashioned bee hive. The brick are laid in cement, but none is applied to the surface; the water flowing into the cistern filters through the front brick into the vault, and by this means is rendered clear and sweet. The pipes from the pump enter this filter, the point of entrance being rendered tight by cement. Water will continually fill the vaulted chamber; each stroke of the pump exhausting it will facilitate the flow, so that there is at all times a sufficient supply within the filter. Since we resorted to the expedient mentioned we have had no trouble whatever. It is true that we never conceived the idea that the brick would retain or exclude the cholera, typhoid fever, etc., germs, but would rather risk this filter than any other to separate all that can be. We deem cisterns holding collected rain water, filtered as mentioned above, as the best mode of supply for household purposes, and can imagine of but few possible objections to their universal adoption —one of which is the supposed impossibility in certain cases to obtain a sufficiently large collecting surface to permit an adequate amount being caught. It has been estimated that with a rainfall of thirty inches and a collecting surface of sixty square feet, three gallons per day for each person could be collected. This, of course, would not be sufficient in all cases for household purposes, including baths, etc., but practically from houses of thirty by forty feet in size we will collect enough, with rare exceptions, to supply a family of from four to six. Of this we are certain, for we have made it a matter of experiment.

Fifth Question.—All but one answer "yes." He has not made favorable observations. In my experience, and I think in accordance with that of all who have had their attention directed to it, this is one of the principal reasons of our common diseases. Where the vegetable and animal matter is decaying, aided by heat and moisture, can it be possible that disease should not result? All halls, rooms and crevices of the house are in such cases filled with the poison, and though no cases of contagious disease may result, still poisoned blood, with its various attendants, together with the peculiar effect of "malaria," can not fail to be found. It would be idle to discuss this question, it being so palpably true; and yet all over the country and city the points embodied in this question are those that are

most neglected, and about which the greatest ignorance prevails, and they are such as show more clearly than any other the need not only of better education of the people, but of a police power to enforce proper regulations.

Sixth Question—Is replied to as follows; Six at fifty per cent., two at seventy-five, one at thirty, two at twenty-five, and two a "large per cent.," and one nine-tenths of all diseases. If we average it at fifty per cent., what great incentive it is for us to work, and what a deplorable amount of ignorance among the people does it evince. It may be bad upon the physician, for half his vocation (as now judged by the public) would be gone, and as he receives no emoluments, nor yet honor, or thanks, for *preventing* sickness, it would perhaps be *business* to let the community suffer, and yet we do not think it proper; but if it were, we, as medical men, do not look at it in a purely mercenary light. It is our business to *prevent* suffering as well as to *relieve* it.

Seventh Question.—Four answers, typhoid fever; six, scarlet fever; six, whooping cough; two, dysentery; seven, measles; five, diphtheria; one, cholera infantum; three, cerebro-spinal-meningitis; two, rötheln; seven, none. Some of those (judging from the language used) might properly be classed as sporadic cases; but including all, there have been thirty-seven epidemics of the various diseases enumerated. Those were distributed through the districts from which our report emanated.

Eighth Question.—Fifteen considered filth to act as a "nidus" for germs of typhoid and typho-malarial fever, cholera, etc., but believe that it may have a *direct* agency in producing derangement of the system, as we all admit to be the fact. Five consider that typhoid fever may be produced by filth; two, typho-malarial fever; one, dysentery; one, cholera infantum; one, some forms of skin disease, and three return no answer. From the tone of these replies, we judge that nearly all agree in considering "filth" a nidus for various forms of "communicable diseases," and in addition as capable of contaminating the system so that some form of nondescript conditions, usually termed "blood poisoning," may result, as well as the better defined typho malarial fever.

Ninth Question—Is answered as follows: Fourteen consider there is a change to typhoid fever, and what they are pleased to term a dynamic form of diseases in general. Six have noticed *no change*, with a modifying clause, however, "unless we consider the changes in climate caused by opening up the country by advancing civilization, such as destruction of the virgin forests," etc. They all testify that according to this view diseases *have* changed in *some* degree, first malarial fever to typho-malarial

and typhoid, that certain diseases have been, therefore, rendered milder, while others, almost unknown here before, have taken their places. This is in accordance with the experience of physicians in other countries and in other parts of this country. In this city, forms of diseases which occupied our attention almost exclusively thirty to forty years ago, have almost disappeared. Other forms, generally of a milder and by far less fatal character, have appeared. This beneficial change is due, in a great degree, to more thorough drainage and the absence of decomposing vegetable matter. Could all other sources of disease be in an equal ratio banished, then the proportion of sick and of mortality from disease would be diminished by one-half from what it is now.

Tenth Question.—Seventeen answer "yes" and three "no;" thus a majority consider the country as much in need of a Board of Health as the city, and if all the profession could be heard, but few would be found to doubt the point. Taken in connection with the eleventh, twelfth, thirteenth, fourteenth and fifteenth questions and the answers to them, it goes to show that by *all* (including even those who reply "no" to this tenth question, that if it were not from ignorance, fear of the cost of such a board and the jealousy of some practitioners) the good effect of such an organization would be admitted. All the gentlemen who have favored me with replies, give as answers to the fifteenth question one of the above conditions, viz: ignorance, fear of the cost or jealousies as the hindrance to the plan, and none admit that the subject has been presented to the people in their section of the country. This fact, taken in connection with the reply to the former question as to the effect upon diseases of certain means employed, shows us the necessity either to first *educate the people before we have a State Board, or procure a Board first and use it as a means of education.* Which shall it be?

Twentieth Question.—Answered as follows: Four are opposed to lead and zinc pipes; twelve have nothing to say; two charge wood with "changing the taste, under certain conditions;" one is in favor of iron. We arrive at this conclusion, that either the effects have not been noticed to a great extent, or else that the supposed "bad" effects of different pipes are judged of either by the "taste" imparted to the water or the known poisonous effects of certain metals upon the system when taken into it under certain forms. We all recognize the bad effects of zinc, and also of lead, when oxidized; but I hold that even with pure rain water it need not nor does not produce an unpleasant effect upon the system if the water pipe be filled constantly with water, as in the case I have mentioned in the cistern.

Twenty-first Question.—They all answer "no," except Dr. Rogers, of Madison, who gives a partial analysis. He gives fifty per cent. of hardness and a large proportion of organic matter.

According to my own experience in the analysis of water of this city, there is, if anything, over that amount of "hardness," and the "organic matter" is excessive. The water obtained from the water works contained more organic matter than any well. And my belief is that in the country and villages of the State, the water, in an equal ratio, will be impure. A systematic analysis would show that we drink by far more than several "pounds of dirt" per year. This can and ought to be avoided.

Twenty-second Question.—Seventeen answer "yes," and generally they class such diseases as "malarial." Two attribute malarial diseases to atmospheric changes, and not to soil saturations; two to decomposing vegetables, and one returns no answer. This I consider about the ratio throughout the State of physicians who consider "soil saturation," in conjunction with decomposing vegetables, as the cause of malarial troubles. No doubt the wet soil has a great deal to do with "atmospheric changes" to which many attribute the phenomenon of "malarial diseases." In either case this condition should be amended by thorough drainage.

Whatever reply may have been made to the twenty-third and twenty-fourth questions, they added nothing to our store of knowledge.

AN EPIDEMIC OF DIPHTHERIA.

T. FRAVEL, WESTVILLE, LAPORTE COUNTY, IND.

The object of the paper I present to-day is to give something of an account of the epidemic of diphtheria which has recently prevailed in the western part of Laporte county, and more particularly in the town of Westville and vicinity. This locality, since the founding of the town, has enjoyed exemption from many of the epidemics that have visited other portions of the county and other localities in the northern part of the State. There occurred in 1858 some fifteen or twenty cases of scarlet fever of a mild type, and in 1866 there was a general prevalence of measles, which in two cases proved fatal. Now and then we have had sporadic cases of diphtheria, scarlet fever, measles, whooping-cough, etc., etc., but we are very seldom visited by epidemics, and especially those so grave and so general in their effects as the epidemic of diphtheria, which we have so recently suffered. The topography of the country immediately about the town does not seem to be favorable to health beyond that of other localities in the county, but Westville has always enjoyed the reputation of being a healthy town. It is on a line between what was originally heavy timbered land and prairie. The timbered land is north and west of the town, and is dotted here and there with small swamps without drainage. The prairie land lies on the south and east, and in the main is free from swamps containing standing pools of water. On the southwest is a marsh, rich in the best of grass, from one-half to one mile wide, and extending to the Kankakee river. It is mostly drained by a natural channel near its center, and contains little, if any, standing water. On the north, for a distance of six miles or more, more than half the timber has been cleared away, and the malarial diseases which prevailed to an almost alarming extent while the land was in a state of nature, having disappeared about in proportion to the falling of the timber and cultivation of the soil, leaving the country north of the town yet sub-

ject to yearly returns of fever and ague. The prairie country south and east generally suffers little from malarial diseases. The line of demarcation between the healthy and sickly region is along the edge of the timber, and is almost as traceable as a public highway. Strange as it may seem, though Westville is located on this line, it enjoys the same comparative exemption from bilious attacks as does the prairie.

The people living north and south of this line (excluding Westville), suffered about equally in the recent epidemic, but those living south of the line, as a rule, had passed mostly through the epidemic before there were many attacks north of the line. In other words, the disease in the malarial region was later in its development than in the non-malarial region. If my observations are correct in this regard, is it not a reasonable deduction that the causes of diphtheria and intermittents are antagonistic, and that malaria retards the rapid reproduction of bacteria, and in a measure protects from the disease? This idea may gain strength in the fact that sore throats were quite common in the late summer and early fall months, when malarial disease was most prevalent, but none developed the pathognomonic symptoms of diphtheria until bilious diseases had perceptibly declined. The disease seemed held at bay until people ceased to chill and shake. Another circumstance tending to corroborate this view is, in one neighborhood where the people suffered most with ague and fever during the fall and winter, diphtheria made its appearance only after all malarial trouble had disappeared. That there are poisonous gases, and emanations, and vegetable parasites, that antagonize each other we are not without ample proof—the stronger, so to speak, gaining the ascendency, and developing disease peculiar to itself. Oertel has developed the fact, through the medium of the microscope, that the sphero-bacteria (or micrococci) antagonize all other forms of bacteria, the latter rapidly disappearing in ordinary angina, when the presence of the former is discovered. Antiseptic agents, by chemical changes or otherwise, destroy the power of noxious gases to create and develope disease. In the domain of medicine and chemistry we are not without ample proof of the power of one poison to destroy the toxic powers of another, either alone being deadly in its effects. May it not be reasonable, then, to admit the possibility that malaria may hold an antagonistic relation to the poison producing diphtheria?

The simultaneous appearance of the disease over a district of country extending from Lake Michigan fifty or seventy-five miles south, and embracing about twenty miles in width, visiting both country and town, mark it as epidemic, and not endemic in its character, though local

causes have had the effect, at some points, to intensify and render more malignant the disease.

The presence of the disease in Westville was doubtless dependent on a general epidemic influence; but, as already intimated, as Westfield suffered more than the surrounding country in the extent and fatality of the disease, it is no doubt true that local causes contributed greatly to the result.

A casual survey of the town would not give the impression of an accumulation of filth. On the contrary, our good average sidewalks, and the uniform cleanly appearance of our streets, give evidence of fair sanitary regulations. But Westville, like the average western town, is not in all respects cleanly. Its privy vaults are open and exposed. Its alleys, in many places, are the receptacle of sundry species of filth. Five dollars per annum would purchase all the disinfectants used by the inhabitants. During an ordinary winter these sources of poison are locked up by frost, but the past winter being throughout so mild, we had not that protecting agency; and the atmosphere being so constantly loaded with moisture, prevented, as in a thoroughly dry atmosphere, the rapid dissipation of these noxious emanations.

The prevalence of the disease resting so manifestly in the general atmospheric condition and the local causes I have mentioned, I took no pains to search out any specific cause in any individual family, as cellars, sink vaults, etc., for the poisonous agent seemed to be no respecter of persons or conditions—the rich and the poor, the well fed and the poorly fed, the cleanly and the uncleanly, the well clad and the thinly clad seemed to be alike the victims of the disease. It could hardly be possible that had our general and individual sanitary and hygienic regulations been all that could have been desired, we could have escaped the epidemic; yet the increased mortality over that occurring in the country around seems to be conclusive evidence that the local causes I have mentioned as existing in the village, though probably not sufficient to cause or originate the disease, played an important part in increasing its intensity.

As I have before mentioned, as early as July, 1877, almost simultaneous with the appearance of remittents and intermittents, an anginous affection, which in my mind was dependent on a diphtheritic influence, also prevailed. I think as many as one-fourth of my fever patients were thus affected. But malaria having possession of the field with ready facilities for reinforcement, held bacteria on the skirmish line until supplies were cut off by a lower temperature. Through August, September, and October there seemed to be a constant war between malaria and bacteria; the latter bringing up the reserve in the latter part of October, and the former retiring from the contest.

The first case that marked distinctly the active beginning of the epidemic occurred about the first of October in a child about six years of age. It fell into the hands of a competitor; was said to have a sore throat with extensive exudation, and died in about eight days of diphtheritic croup. The second case occurred on the ninth of the same month, and fell into my hands. This case assumed a croupal form, and as it contains some points of interest, I will briefly relate it.

The subject was an intelligent boy nine years old, healthy and well developed—the child of a well-to-do German. Complained on the sixth of October of sore throat, but went to school. Did not feel sick on the seventh, and ran about town after school hours, using occasionally a gargle of pepper, salt, and vinegar in water. On the night of the seventh he coughed quite hoarsely, breathed wheezingly, and had high fever. The symptoms abated somewhat in the morning, and he was about the house all day, but still had slight fever. On the night of the eighth his fever increased, his breathing grew much worse, and his cough became dry and croupal. The family became quite alarmed, and I was sent for at eight o'clock in the morning. Found the boy sitting in his bed, leaning forward, and breathing very laboriously. He had been in this condition all night. On examination of the throat (which he said was not much sore), I found the fauces inflamed and the tonsils swollen and covered on the anterior and interior aspect with a white exudation. He could speak only in a whisper, had moderate fever, pulse 130, small and weak, submaxillary glands swollen, tongue covered with a yellowish dirty coat, countenance anxious. Said he was very tired. Three grains of turpeth mineral caused him to detach, by emesis, a piece of membrane two inches long and one-half inch wide, bearing the transverse marks of the cartilages of the trachea. This gave him much relief, and he lay down with ease and slept the most of the forenoon. When I visited him in the evening he was again sitting up in his bed with an aggravation of all his symptoms. His pulse was 140; face, hands and arms bathed in perspiration; body normal temperature; lips and fingers livid; dyspnœa extreme; epigastrium retracted; cough dry and croupal; countenance anxious, and great restlessness. In this condition he continued until 10 P. M., when his cough loosened a little, and in almost a death struggle he coughed up a cylindrical cast of a section of the trachea, three and one-fourth inches long and smaller at one end; the small end passing off from the main cylinder at an obtuse angle, indicating, from the size and its divergence, that it reached the bronchus. The relief was as perfect as if I had opened the air passage below the point of obstruction. There was joy in the household, and the little suf-

ferer seemed surprised at the sudden and agreeable change. Two hours from this time he was sleeping quietly, his surface natural, his breathing easy, his pulse one hundred and much improved in strength and volume. Four hours later he was resting yet, but breathing with a little effort. His pulse was 110 and his face a little flushed. From this time on through the day his respiration became more and more labored, and all other unfavorable symptoms increased until after midnight, when, as if nature had rallied for a last effort, he coughed and threw up another perfect cast of the trachea two inches long and a little greater in diameter than the former. This again gave him great relief in breathing, and he rested quietly, but his pulse continued rapid, and only a few hours elapsed until his breathing was again obstructed, and he sank and died ten hours after the expulsion of the last cast. In this case, membrane was expelled representing 7¼ inches in length of a perfect cast of the trachea. A child's trachea is not so long; therefore the second cast must have been reproduced, and that, too, within a period of six hours; for although it was twenty-six hours between the expulsion of the two perfect casts, only six hours intervened between the expulsion of the first and the return of the dyspnœa caused by the second. The perfect relief from labored breathing for two hours following the expulsion of the second cast, shows also the trachea, for that length of time, to have been free from obstruction.

During the latter half of October and in November cases became numerous, and continued to occur through December, January, February and part of March—the monthly average of attacks being much the same for these months, declining in March, and in April almost disappearing, excepting here and there a case.

Replies to notes of inquiry sent to Michigan City, Wanatah, and other points along the line of the L. N. A. & C. R. R., informed me that the disease invaded those points during the latter part of October and the first of November, corresponding with its appearance at Westville. Its simultaneous decline at these points was equally well marked.

Dr. Godfrey, of Michigan City, seemed to be of the opinion that vicissitudes of weather influenced the disease at that point, cases being more numerous in cloudy and damp than in clear and dry weather. In Westville I was unable to discover this trait. When the weather was gloomy and disagreeable, the popular expression was, "This is bad weather for diphtheria;" but according to my observation the disease was not in the slightest influenced by sunshine or clouds, dry weather or damp, cold or warm.

One peculiarity of the disease, however, was quite observable, and this

was also noticed at Michigan City, viz.: the attacks occurred in groups. There would be from six to twelve in different parts of the town simultaneously attacked, and this without regard to the character of the weather. These cases in many instances would all recover before the appearance of others. Then would follow a few days without new cases. These days of hope were days of delusion. They seemed only the precursor of evil, and were sure to be followed by other groups of attacks.

Very nearly all the members of some families were attacked simultaneously, while other families were attacked by installments, occupying in one family a period of two months before it disappeared for any length of time from the household.

A prodromic period of two to six days occurred in some cases, while in others the attack was sudden, being preceded by a chill more or less severe, followed by very high fever. As to the gravity of the attack, nothing could be determined by the character of the invasion.

As in scarlet fever, in some families all the grades of the disease were simultaneously present, from the mildest that needed little attention, to the most severe that speedily terminated in death, though none died in less than four days from the invasion. But two families suffered a loss of more than one. In these two each died.

As regards the general prevalence of the disease, its extent may be seen in the number of attacks, compared with the number of inhabitants. The population of Westville, I think, can not exceed 750 or 800. The number of cases of actual, well-developed diphtheria in the town can be approximately set down at 250, besides one-third of the remainder of the community suffering lighter pharyngeal trouble—common angina, tonsillitis, etc.; in fact few escaped more or less sore throat. Within the corporation there were sixteen deaths, and outside of the corporation and within four miles of the town, there were about fifty cases and one death. Of the seventeen who died, five were males and twelve females. All were under eleven years of age. These general, and perhaps less exact statements embrace the cases in the hands of all our practitioners, and are as correct as I could make them without further personal knowledge of cases. In my own practice I record 108 cases of well-marked diphtheria, of various grades of violence. Of the 108 cases, 75 were between 1 and 18 years of age, and 33 were between 20 and 75. Of those between 1 and 18, 36 were males and 39 females. Of those between 20 and 75, 11 were males and 22 females—making and aggregate of 47 males and 61 females. The common remark among the people was, that females suffered more than males. Out of the 108 cases there were 5 deaths, all

between 2 and 10 years of age. Of these five who died in my hands, one died on the fourth day, one on the fifth, one on the sixth, and two on the eleventh. One died from the early invasion of the trachea; the other four escaped this feature of the disease, and died from extensive exudation in the fauces and nasal passages, involving important blood changes, and resulting in septicemia.

In one fatal case, several days before the end came, the conjunctiva of both eyes were covered with the exudate as far as could be seen, and the eyes swollen entirely shut, giving the appearance of a grave case of erysipelas. In one adult male, the œsophagus was the seat of the disease, and became entirely obstructed three inches below its pharyngeal opening, preventing deglutition for three entire days. The supra-clavicular region, including all the space between the maxillay and clavicle on the right side was entirely obliterated by infiltration, and became very dense, firm, and non-elastic. His breathing was unaffected. He recovered in two weeks.

In an adult female, the disease was located in the trachea, about an inch below the larynx, involving to some extent the latter. This case came near proving fatal—not from obstructed respiration, but from asthenia. Gastric irritation was very prominent, and almost every article of food was promptly rejected. Nothing but the most active stimulating course, until the disease began to subside, saved her from sinking. To the present, she has not obtained perfect relief from uncomfortable feelings about the larynx, and at times feels much prostrated.

In the majority of cases of ordinary violence, ataxic symptoms were not prominent. In many of the worst cases, delirium occurred—and in those who died, extreme restlessness invariably preceded the fatal issue for several days, and adenitis and cellulitis (showing blood poisoning) were in almost all such cases especially prominent. Notwithstanding the rapid, weak, and compressible pulse in almost all severe cases, showing great feebleness of the heart's action, the muscular strength and firmness of the patient remained good to the last, many walking across the floor a few moments before death. In two of my fatal cases syncope ended the scene, both falling dead from an erect position.

The number of cases, among those who recovered, where the nasal passages became involved, through their entire extent, were not numerous compared to the number attacked; and few cases, excepting the most violent and protracted, emited the characteristic odor. Nasal hemorrhage was common, but by no means a constant symptom. It occurred in only fifteen of my cases, and of those who died in only two. This symptom, to which considerable importance is attached by some, is of no value as a

prognostic sign. It is, by no means, a measure of the gravity of the attack. Peculiarities of constitution, more than any thing else, determine its presence. In one family, of three children who had the disease, all had profuse hemorrhage; two were mild cases, and one proved fatal. It has occurred in this epidemic in all grades of the disease. Adenitis was present in all severe cases, but in no case resulted in suppuration. In but one instance did the exudate extend anterior to the pendulous palate. The functions of the bowels were generally normal. Cathartics were seldom needed, and diarrhea occurred but twice.

During the epidemic, cases of unmixed scarlet fever occurred now and then in the country, but none in the village. I met with one case where doubtless both diseases existed at the same time.

The usual sequelæ of diphtheria but seldom occurred. I observed but one case of nervous disturbance, and that was dysphagia from slight paralysis of the muscles of deglutition, which needed no treatment.

During the course of the epidemic I made tests of the efficacy of the chlorate of potassa as a prophylactic. To one family of German origin, where there were eight children, the youngest fourteen months old and the remainder as near the same age as nature would allow (barring twins), and where sanitary regulations were not observed, I gave from four to eight grains of the prophylactic from three to four times in the twenty-four hours, and continued it for five or six weeks. In this family three of the children had very mild attacks and the remainder escaped. In another family of less cleanly and less cultivated Germans, where there were six children, and where I found the mother, and one son nine years old, down with attacks of the disease of medium violence, I prescribed the same remedy in the same manner, and no more cases occurred. In another family of four children I gave the medicine in a similar manner, and they had entire exemption from the disease. It was also given in other families where the disease appeared with some degree of violence, but the uncertainty of its faithful administration in these cases bar them as fair tests. More thorough and protracted trial is necessary to establish the claims of this agent as a preventive of diphtheria, but the facts I have obtained in my limited experience impress me with the belief that it is an agent of some power.

I believe that in the growth of the child there are periods of varying susceptibility which render the system at times powerless to resist certain impressions, and that poisons received into the blood at these periods of increased or exalted susceptibility, rapidly prove fatal, and in this as much as in anything else, rests the explanation of the failure, in certain cases, of sanitary and prophylactic measures. I was impressed with this idea

in one rapidly fatal case, in a child ten years old, where sanitary regulations were well observed. I was satisfied that the fatal result was not from the intensity of the poison, nor from the failure of sanitary regulations to exert their usual power in preventing disease, but from a peculiarity or susceptibility of system in which all the conditions were present to favor the rapid development of the disease.

A few words in regard to treatment. In cases demanding interference I usually directed—

℞ Permanganate of Potassa..... grs. iv.
Water..... ʒiv.

A teaspoonful every two hours, day and night, alternated with a teaspoonful of the following:

℞ Flu. Ext. of Belladonna..... gtt. viii.
Water..... ʒiv.

I directed a gargle of the following to be used each hour between the above doses:

℞ Chlorate of Potassa..... ʒij.
Hyposulph. of Soda..... ʒij.
Salt..... ʒi.
Tinct. of Capsicum..... ʒi.
Or Alcohol..... ʒij.
Water..... ʒvi.
M.

Each time before taking medicine or using gargle, the throat was cleansed with warm water, and nothing to be swallowed for ten minutes after taking medicine or using gargle. Topically I applied once in twenty-four hours equal parts of a strong solution of tannic acid and tinct. mur. iron. When the schneiderian membrane was involved, I passed through the nostrils once in three hours, by means of a nasal douche, from four to five ounces of a solution of permanganate potassa in very warm water, three grains to the pint. Salt pork stitched to a cloth was my usual external application to the neck. Milk and animal broths were freely given throughout the disease.

The above course of treatment was followed, with but few exceptions, in all the cases of ordinary severity. As a topical application I used in a few cases, as recommended by J. Lewis Smith, per sulph. iron, glycerine, and carbolic acid. But the iron and tannin acted better in my hands. In the cases of very young children, eighteen months old and under, nothing but the potassa and belladonna were used, and recovery followed as speedily as with the gargle and local treatment.

In case of a mild type, I sometimes used, instead of permanganate, three to four grains of the chlorate of potassa, every three or four hours, and the cases did well. In a few cases of moderate severity, I also gave the chlorate in combination with iron and syrup, with good effect.

In diphtheria, when it prevails as an epidemic, a five per cent. loss is almost, if not quite, a minimum mortality; and, it would seem, should give decided endorsement to the course of treatment pursued, but when we are confronted by the fact that scores of cases of the disease recover with equal facility under the influence of domestic local treatment alone, in the hands of courageous mothers, we hesitate in making up our minds as to the importance of our remedies, and waive a decision until more extended experience in the different methods of treatment, and no treatment at all, give us greater opportunities for comparing results. Nevertheless, were I to enter again into such an epidemic, the success I have had in the one just passed would lead me to pursue the same course of treatment, varied only as my judgment would dictate in dealing with each individual case, taking care that I thwarted none of nature's kindly and sometimes powerful efforts to restore.

NASAL CATARRH.

JOHN S. DARE, M. D., BLOOMINGDALE.

I know of no malady more disagreeable to the patient or more perplexing to the physician; I know of none of so wide-spread prevalence, concerning which so little has been written or spoken *ex cathedra;* nor do I know of one so grave in its nature and tendency, of which the mass of the profession appear to know or care less, than of nasal catarrh, as it presents itself in acute or chronic form. By common consent of all, it is mainly left to the care of specialists, or to the mercy of patent medicine concoctors, who, in the *very* mysterious providence of God, are permitted to dwell upon the earth. It is lamentable they were over born, or, being born, that they had not dropped lifeless from their mothers' wombs! For not only have they increased the number of sufferers from the malady, but they have hastened the speed "of the innumerable caravan that moves along to the mysterious regions, each to take his place in the silent chambers of death." It would seem that the edict appointing death to every man is made doubly sure by giving life to these cormorants who fatten on human credulity and sport with its sufferings. "Only this, and nothing more."

Catarrh generally comes under the mask of a "cold," producing neither uneasiness or alarm, not sufficient to call the attention of the medical advisor; hence he rarely sees the case in its beginning, but is called to its examination in its chronic or commencing chronic stage. It not infrequently happens that he overlooks the presence of catarrh in his search for some other affection, and this catarrhal complication having escaped his notice, he is astonished to find, some months afterward, that his patient is under the care of some specialist, or dosing his nose with some snuff or lotion. [*En passant*—if the doctor had been more careful he might have retained and treated the case himself.] The first cold subsides, with little

continuing discharge or other inconvenience save the internal nares are dry and scabby, and the patient occupies his spare time picking the waxy concretions from the nose. After a time these symptoms are aggravated by a "cold in the head," and so on vibrating between better and worse until the disease is fastened on him, and he is worse all the time. Now he becomes insensible alike to the perfume of flowers and the most intolerable stench; his sense of smell is gone, and his friends discover (he does not) that his breath loads the ambient air with an odor not at all comparable to the orange groves or the cinnamon isles. It is exceedingly indescribably offensive. It is *per se, sui generis*—unrivaled by the goat and unsurpassed by the skunk!

Now it is chronic, with an aggravation of all the symptoms or results, to which is added very perceptible constitutional disturbances. A regular tramp, "pursuing the even tenor of its way," it climbs to the frontal sinuses, or it enters the ductus ad nasi, passing the lachrymal sacs to light the fires of conflagration upon the conjunctiva; or burning through the Eustachian tubes it reaches the internal ear, or it usurps the antrums of Highmore. It involves or threatens all of the mucous membrane that lies in or above the laryngeal box. Also we can see how it may, descending through the trachea, enter the bronchial tubes and generate bronchitis. As a part of it, and very frequently, we have the dripping nose with its cadaverous exhalations; or frontal neuralgia, with or without abscess; or necrosis and destruction of osseous structures of the nose; or abscess of the antrums of Highmore, with its pain; or otalgia and otorrhea "wasting *its* sweetness in the desert air;" or all of these may be united in one case, holding high carnival.

I have observed a form of this affection, which I can best describe as dry catarrh. In this the stench has appeared to me as more constantly in attendance, and of an average superior quality! The liquid discharge is sparse and thin, yet there does accumulate, within the nares, a thick greenish, yellowish, homogeneous concretion, part of it being dry, crusty, very offensive. It is not picked, but is blown, from the nose, in the form of a plug, and leaves with its departure a peculiar burning sensation, which I suppose to be the result of the thin ichorous discharge coming in contact with the ***unscabbed*** site of the departed plug.

In the liquid form, the discharge is in greater quantity, semi-opaque, and of better, and pretty uniform, consistence; and, as the case advances, it requires prompt attention on the part of the individual, for if he does not attend to it, it will attend to itself. Now for a while, by a kind of insufflation, the posterior nares is emptied into the mouth and thence its contents discharged, then the nose is put on relief duty for the emptying

of its "outer porch," consuming much of the man's time and nauseating his friends. No one knows better than his nose knows, that "day is for mortal care and night for meeting round the joyous hearth!" During sleep, however much his day-time may have been occupied, his nose may enjoy its *otium cum dignitate;* the secretion, smaller in quantity, inclines to drop from the posterior nares and to lodge in the pharynx, where it remains, (a part of it, perhaps, having been swallowed), until rising in the morning, with some hawking and coughing the box is emptied, and the nose proceeds at once to business with an energy worthy of a better result.

As might be expected, the mucous membrane covering the affected parts, if examined, present an unnatural redness, at times dotted with superficial ulcers. Particularly is this the case with the posterior wall of pharynx, tonsils, uvula, and soft palate. Dr. LeHardy, of Savannah, seems to have devoted much care to the investigation of this disorder, having applied the microscope. He says, "In advanced cases there may be seen upon the nasal floor, or upon the septum, a scab, which is removable by the forceps. It is dark, very adherent, and its removal brings blood." "In every scab," he says, "the microscope shows mucous cells, exudation cells, pus cells, blood cells and granules, epithelial scales and fibrinous filaments, intermixed with a greenish homogeneous fluid, floating freely among the cells or incorporated with the epithelial scales." Also, that in the liquid discharges there are small rounded cells, single or in clusters, or floating in lines rapidly on the surface—which I believe to be the bacteria or disease generators."

As I have observed nasal catarrh, I have not deemed it as an anemic disorder, unless we denominate as anemic those disorders which, coming upon one in full health, produce impoverishment of the blood. This conceded, and all diseases are anemic; for there are none that by long continuance do not tend to result in anemia. I think we may see, if we trace the history of cases coming under our observation, that the anemic habit is not more favorable to its production or development than is the plethoric habit. In this connection I remark, that whatever the habit, or constitution, or hereditament of the patient in the forming stage, he is, as a rule, anemic when he applies for treatment—and whether his anemia has begotten the catarrh, or whether the catarrh is the sire of anemia, it may be difficult to decide. On this point I am of opinion that it is a local affection, not dependent on any constitutional disturbances, and that all evidences of constitutional disturbances, in its beginning or in its progress, are the result entirely of the local, or *nasal disorder.* If constitutional symptoms preceded the local affection, they were not proliferous of the

local malady or in any way chargable for the incoming mischief, and if they continued they were merely co-incidental; if they succeeded the local attack, they were of its production.

If it is confined to any class of society, it is not to the lower. As far as I know, it prevails among the better class as a rule; the poorly fed and clad are exceptions. Neither do I observe it more frequently among the anemic than the plethoric—some of the stoutest persons of my acquaintance are among its victims. It is partial to the women. I do not know of a child under ten years of age upon whom it has fallen; and the reddened nose of the toper is innocent of this inwardness, while the temperate and luxurious liver is often annoyed with it.

It rarely touches one member of a family without involving others, sometimes all; especially does it seem common to husband and wife. True, I know, and others may know, of single cases as occurring in a family, but they will not likely remain single for a great length of time. I am not prepared to say that nasal catarrh is contagious, but I incline to, and think there are many reasons for, this opinion. Things look suspicious, and may justify the professional divans, who have facilities far beyond mine, to give this matter a thorough investigation.

In support of its contagiousness, we have, as I see it, stronger testimony than we have of the contagiousness of phthisis, which latter, though not established, is, as lawyers would say, *sub judice.* Dr. Francis Condie, of America, and Dr. Lawson Tait, of England, concede consumption to be the result of hereditary taint, vicious habits, exposure, etc.; also incline to the opinion that it is often traceable to contagion. See *Am. Journal of the Medical Sciences* for 1871, vol. lxii. Its mode of conveyance is supposed to be, by the inhalation of microscopic parasites. Now, of catarrh as a contagious disease, there appears to me, outside of my observances, and founded solely in reason, more cause for concluding it contagious than there is for believing phthisis, or even typhoid fever, to be of contagious origin. The nature of the discharge which loads the atmosphere, filling every niche and corner with its stench, coming in direct and constant contact with the Schneiderian membrane of all who "pass that way," and burrowing beneath the epithelial cells, can not, in the nature of things, fail to produce more or less mischief. Especially is this supposable, when we consider that this bad odor is the product of and composed of particles of decayed, putrescent animal matter—microscopic parasites, perhaps—constantly falling away from a diseased structure. True, Friedreich failed to successfully transmit it by inoculation, and it is therefore said to be non-contagious. I inquire, is this experiment conclusive? Must one fact—

admitting it to be an established fact—outweigh others fully as well established? And, I ask for information, are all contagious diseases transmissible by inoculation? Are typhoid fever and the minor exanthemata generally? To my mind the experiment is not conclusive. It is a plant of slow growth, and requiring an unusually long period of incubation. If it be contagious as occurring in families, no one pretends that it is communicable as rapidly as many other known contagious diseases, and therefore the short time of contact by inoculation could not be accepted as a fair test of its transmissibility.

Again, if planted in a *small point* of healthy mucous membrane, or if held in contact with the membrane, is it not reasonable to believe that the recuperative powers of the much larger tract of healthy membrane would neutralize the small point attacked by inoculation? Also, is it not reasonable to suppose that the poison or infection, or microscopic parasites, that float in the air, are in daily, and in many cases, constant contact with the healthy adjacent membrane, and that they may thus find a lodgment in the epithelial cell and produce that which the inoculation of one single point had failed to do, an effect which the direct application of the diseased mucus would not develop? The fact that in the beginning, it is a local affection, and not preceded with constitutional disturbance, to my mind strengthens this opinion. If it were a constitutional affection, but this is doubted, the local affection first and constitutional disturbances follow; if it were constitutional entering the circulation, giving rise to a fermentative action of the blood and tissues, and then manifesting its local action—if this were so, I could understand how, when entering the circulation by any of the known methods—by inhalation, by swallowing, by cutaneous absorption or by inoculation—the minutest particle of contagion or malaria, might generate, by fermentation, too large an amount to be neutralized by the remaining healthy tissues. The whole lump would be leavened.

In inoculation with small-pox virus, local symptoms are the last to manifest themselves, and the same may be said of all constitutional affections; but in catarrh, whether infectious, malarial, or hereditary, the local symptoms are first to manifest themselves, and constitutional disturbances follow very slowly—generally not appearing until the local symptoms have made very perceptible depredations. In this respect catarrh, if constitutional, is an inversion of the order of all other constitutional ailments. In catarrh, I suppose, the fermentive process to be begun and carried on in the mucous membrane, dragging its slow length along until the whole mass is leavened. While in small-pox, measles, scarlatina, etc.,

the zymotic process is begun in the blood, and through it, poisons the entire whole, so each peculiar disease declares its own personal identity as the result of constitutional disorder.

To conclude, I must not be understood as saying that it is always of infectious origin, for it does not so appear; but I do say that my observances lead me to believe that once established, from any cause, and passed into a chronic stage, it *is* communicable from one individual to another. On this point many instances might be given in testimony. All must agree that it is dependent upon some peculiar family taint in itself hereditary; or it, as a malarial affection, depends upon some local cause, or epidemic, or, as already stated, once established from any or all of these causes, it becomes self-propagating. What standard authorities say on these points I am unable to state; but I tardily believe the observances of physicians, who *practice* medicine in the rural districts of the country, will allow them to pronounce it hereditary. The only family taint to which it is at all chargeable is scrofula; yet we do not find the children of scrofulous diathesis suffering more from this pest than others. Indeed, I fancy them, in the ratio of their number, less liable than are those of anti-scrofulous proclivities. On this point I will not be positive, but I think a careful investigation will not show many cases of consumption and its kindred diseases as traceable to, or complicated with, nasal catarrh. It can not surely be argued that catarrh, belonging to the same genera, has been in numerous cases substituted for consumption, or that it is consumption of the Schneiderian and its appendages, a la chronic pharyngitis or tabes mesenterica. Nor will it be seriously argued that catarrh, coming upon a scrofulous diathesis, acts as a prophylaxis to other forms of scrofula by the known law that two diseases can not, at one and the same time, possess the tenement. It were easier to believe catarrh to be a disease, *sui generis*, self-sustaining, self-propagating. That it is malarial is extremely doubtful, both from the nature of remedies used in its treatment and from the universality of its topography, on the high lands and in the low lands, upon the mountain slopes and marshy plains, in town and country, at all seasons and in all temperatures, it is at home.

Finally, with the hope that this subject may receive from the profession all of the consideration that its great importance demands, and that some other mind and readier pen may lead us to a more proper knowledge of its nature, causes, and treatment.

REPORT OF A CASE OF BASEDOW'S OR GRAVES' DISEASE.

THOMAS J. DILLS, M. D., FORT WAYNE, IND.

The comparatively infrequent occurrence of this disease, and the interesting phenomena attending its clinical history, have induced me to report to this society the following case:

Mrs. L., aged 35, consulted me July 11, 1877, for what she was pleased to call severe palpitations of the heart. Prior to her present ailments her health had been excellent; she was the mother of three living children, the youngest of whom was six years old. The patient was at that time, and had always been, free from any uterine disease or menstrual disorder. Absolutely nothing could be found, in her family or personal history, to which any importance could be attached as bearing on her present disease. In November, 1876, the right lateral lobe of the thyroid gland became notably larger—the swelling was gradual and painless. Three weeks later the husband noticed the eyes were more prominent than usual, the right slightly more in advance. The swelling of the right side of the neck gradually extended over the isthmus, and finally involved the left lateral lobe; and within two months the bronchocele and exophthalmos had attained the size and prominence now seen. In January, 1877, the patient complained of palpitations, dyspnœa, and vertigo.

During the six months last past the patient has become very nervous; has lost flesh, and the sleep much disturbed. The heart symptoms are now much worse, for which she seeks advice. Present condition: The complexion is pallid; the conjunctival and buccal mucous membranes very pale; the face bears the evidence of anxiety and alarm, and a feeling of impending danger is, at all times, uppermost in the patient's mind; the protrusion of the eyes is co-incident to the orbital axis, and as

near as could be approximated, to the extent of four line. A zone of sclerotic, two lines in width, is visible at the upper and lower margins of the cornea. The mobility of the eye was slightly restricted upwards, and the upper lids follow the globes but very imperfectly when the patient looked downward. Forced attempts at closure of the lids were unsuccessful, but steady, persistent pressure over the partially closed eyes caused the globes to recede perceptibly within the orbits.

She reads Jaeger No. 1 at 14″, and her vision=$\frac{20}{60}$ Hm. 1–30.

Ophthalmoscopic examination reveals no obnormality of the fundus. The swelling of the thyroid is uniformly smooth, the right lateral lobe the larger. The circumference of the neck over the tumor is 14″ 3‴.

Slight pressure is productive of pain and dyspnœa. On palpation a distinct impulse, synchronous with the heart-beat, is imparted to the hand, and on auscultation a loud venous bruit is plainly heard. The heart beats so violently against the chest wall as to visibly disturb the clothing over the left breast. On auscultation the first and second sounds are intensified, and a soft blowing sound is heard at the base. The carotids throb violently and the hemic murmur before referred to is propagated to the neck. The number of pulsations is 122. Temperature 99½.

The diagnosis of Basedow's disease was made, and the patient placed under treatment. The limits of this paper will only allow me to present very briefly the subsequent history. My first prescription was one in which the iodides of potassium and iron entered, together with the topical application of ungt. iodin. comp. No benefit resulting therefrom within two or three weeks, this course was abandoned, and digitalis and quinine substituted. So soon as the physiological effects of the digitalis were had, marked improvement occurred. The correction of the former irregularity, the reduction in frequency of the heart's action, and the evident amelioration of the whole train of nervous phenomena, were safely and permananently attained by gradually increased does of this remedy. When the slighter tonic effects were manifest the remedy was temporarily suspended and a laxative ordered. During the nine months last past the only noticeable tonic effects were slight nausea or vomiting, and occasionally headache. At present writing, the patient though not cured, is on the high way of improvement daily, the digestion is now good, and the body weight has increased to its normal standard. She is free from all nervous perturbations, and is sufficiently well to perform the greater part of the lighter household duties. The exophthalmos is markedly less, and the neck now measures thirteen inches. The radial pulse numbers seventy-five, and the heart's action is regular and uniform. A favorable prognosis has been

expressed to the patient and her friends, yet the future clinical history of this case may be the counterpart of others, wherein relapses and ultimate death are reported.

The literature of Basedow's disease is full and complete—and the classical writings of Trousseau, VonGraefe, Basedow, Traube and VonRecklinghausen, have been made available in the present instance. In regard to the etiology of this important disease we are not wanting in important facts. The influence of sex and age are quite remarkable. In a comparatively large number of statistical reports I find the average frequency of occurrence to be two females to one male. Regarding age, it is found that the middle period of life is in nearly every instance the time in life when it occurs. The part which chlorosis or anemia may take in its production is indeed very problematical, while facts as certainly prove the relation of cause to effect which certain nervous disorders sustain to this disease. Cases wherein an epileptical history is recorded, others of hysteria and various other mental derangements, are of frequent occurrence. The influence of climate is not without its bearing. On the Baltic, in Northern Germany, in Switzerland, its frequency has been especially remarked. The pathological anatomy of this affection is as yet not perfectly clear, as the autopsies are few in number and somewhat conflicting in results.

The most constant changes have been those found in the lower and middle ganglia of the cervical sympathetic. These changes consisted in hyperplasia of the connective tissue elements in the larger number of instances, while in others partial or complete atrophy of the nerve fibres. Very naturally, from these somewhat uncertain or variable pathological conditions, our deductions regarding a theory in explanation of the various phenomena are alike uncertain. The increased frequency and disturbed rythm of the heart is very justly attributed to changes in the cervical sympathetic. In the trunks of these latter, Von Beyold has demonstrated the existence of excito-motor fibres; irritation of which produces increased frequency of the heart. Per contra Friedereich, in 1867, maintains directly opposite views. He says vaso-motor nerves, which originate from the cervical sympathetic, are in a state of paralysis, producing thereby the following conditions: dilatation of the coronary arteries, increased quality of blood to the heart tissues, and increased functional activity of the cardiac ganglia. In general it may be said the various phenomena here presented are of angio-neuritic character, and receive especial confirmation, since they approach, if not in general, in detail, the phenomena noticed by division of the cervical sympathetic, and so fully

elaborated by Claude Bernard and Brown-Séquard in 1862 and subsequently.

The termination of this affection is generally favorable, although the exophthalmos and goitre may not wholly disappear. The rate of mortality is placed at twelve per cent.

By way of treatment, the almost constant condition of "physiological unrest" should never be forgotten by the practitioner, and his whole line of treatment should be to overcome it. Rest, *perfect*, absolute rest in the recumbent position, should be first seen to, and the patient must be protected from all disturbing extrinsic causes.

Of the special theraputic agents none other gave such definite, well timed effects as digitalis, and I can not but add the advice of Trousseau, administer digitalis, the sedative par excellence of the circulation. *Be not afraid of giving it* in large doses, etc. * * * * * *

It may be necessary occasionally to drop the exhibition of digitalis, and administer a laxative; but I feel satisfied, from a close observation of this case during the nine months last past, that the dangerous or toxic effects of this drug, as "*cumulative*," have been greatly exaggerated.

I deeply regret that electrotherapy was not employed in this case, as the repeated experiments of galvanization of the sympathetic in the neck have demonstrated its utility.

AN EPIDEMIC OF SMALL-POX.

W. W. BLAIR, M. D., PRINCETON, IND.

It is not my purpose to delineate small-pox, *per se*, but simply to cull a few items of experience from the recent epidemic of that loathsome disease which occurred in Princeton, Gibson county, Indiana, during the past ten weeks.

The history of its introduction to our place is obscure—the responsibility rather resting on an individual of dissolute habits, and by him conveyed to his family, some of whom were in the fourth grade of our public schools —and before any one was aware of its presence in the county even, the contagion was communicated to eighteen families, and those families well distributed over our village.

Of the children first attacked, not one had been vaccinated, and every one had true small-pox, and out of seventeen children there were four deaths. One adult only, a lady teacher, was attacked at the first outbreak of the disease. She had been once vaccinated, and that more than thirty years previously, and had only a slight varioloid, was able in a very few days to wash her own bed and body clothing, and attend to her household duties as though nothing had occurred. The large majority of the cases were among children who were poorly nourished—favorite subjects for all contagious, and even non-contagious, diseases—yet a few of our best homes were invaded. In its course some anomalous symptoms were presented.

In some cases coming under my own observation, the children still had their all-wool flannel shirts on, and underneath that flannel the eruption was very meagre, indeed; whilst over the entire remainder of the body it was as thick as it could be, short of being confluent. The line of demarkation was so distinct as to leave no room for mistake.

Has any one else met with such an account? Or were these only acci-

dental cases? Could it be possible that to envelope the patient in flannel would materially modify the eruption? In no instance where vaccination had been carefully and efficiently performed, either recently or ever so remotely, did the patient have true small-pox, excepting one man whose constitution had been terribly shattered by a lifetime habit of intemperance. Death was the result in this case.

One of the most interesting cases we had occurred in the practice of my friend and colleague, Dr. V. T. West. In a family where one of the first cases and first deaths occurred—a family reduced to extreme poverty—the mother approached the time of her confinement. Upon the appearance of the disease in the house she, for the first time in her life, was vaccinated. Seven days before the death of the child first attacked, her confinement took place. So great was the terror in the neighborhood that the doctor was permitted to enjoy all the honors and emoluments, and required to perform all the duties of the occasion unaided and alone by male or female, except the lady herself. In six hours after the birth of the child the doctor vaccinnated it very successfully, and it passed through the epidemic unharmed, though the mother had a slight varioloid in three days after her confinement. Both mother and child did remarkably well.

In our vaccinations we used non-humanized virus, together with the first crust resulting therefrom; the latter taking effect much more promptly than the former. The inestimable value of vaccination was fully realized; yet vaccinations performed thirty years previously seemed to afford the same protection as those of ten days. The fact that vaccination was difficult to accomplish, furnished no security against small-pox; for some of the worst cases we had, had been again and again ineffectually vaccinated.

Some cases of previous vaccination, where the scar showed a plain, smooth surface, without any "pitting," seemed to afford little or no protection. As to treatment we were highly conservative. We ignored drugs largely. A mild laxative during the eruptive fever, very seldom needed afterward; anodynes to allay itching, and procure sleep; a liberal diet; and I was often astonished at the freedom with which the patients generally partook of food. Locally we applied cold poultices of flaxseed meal to the face, making openings for the eyes, nose and mouth, removing them frequently, and with the happiest results. During the epidemic some sixty to seventy cases occurred, with the deaths above noted. We feel gratified, especially at the freedom from pitting, which our patients generally show, and especially gratified that the medical attendants, notwithstanding their repeated exposures to the contagion, have all escaped. The disease has now about disappeared from our midst, and we part with it most heartily.

UPWARD DISLOCATION OF THE STERNAL END OF THE CLAVICLE.

JOSEPH EASTMAN, M. D., INDIANAPOLIS, IND.

J. H., aged thirty-five years, a well developed, muscular German, by occupation a baker, fell down a stairway, receiving an injury of the left clavicle, for which he was admitted to the Indianapolis City Hospital, September 29, 1877. I saw the case soon after in consultation with Dr. Davis, superintendent of the hospital, and Dr. Ritter, assistant physician, who, previous to my visit, had diagnosed upward dislocation of the sternal end of the clavicle.

On examination of the case, I found the bone resting upon the larynx, seriously embarrassing respiration. The figure of eight bandage, with compress, having been tried a number of times and to no purpose, by the house surgeons, we united our efforts in the application of Sayre's bandage for fracture of the clavicle, substituting the ordinary roller for adhesive plaster, as suggested by Dr. Henry Van Buren, of Chicago. This also failed to retain the bone in position for any considerable length of time. Whenever the patient drew a full breath, so as to fully elevate the apices of the lungs, the bone would slip from its normal back to its abnormal position upon the larynx.

Having observed what I believed to be at least one cause of non-retention of the dislocated bone in position—namely, the distension upward of the thorax—I determined to suspend thoracic respiration to the utmost extent consistent with the tolerance of the patient; and to this end, at the surgical clinic, October 8, 1877, encased the entire thorax in a plaster-of-paris jacket, carrying it well up under the clavicles, while the arms were elevated by assistants. We next brought the bone into position with the arm across the breast, retaining it there by the modified Sayre's appliance

before referred to. We then continued the mold of plaster upon the arm, filling it plentifully over the injured joint, and on both sides of the humerus. When the plaster was fully set, there was no perceptible elevation of the lungs, his respirations being as completely abdominal as could be desired.

The patient wore this appliance for about six weeks, when it was removed and he was discharged from the hospital, with perfect use of his arm. There was some swelling over the torn ligaments, but the bone appeared to Dr. Todd, and other gentlemen present, as perfectly in place as when first reduced.*

The pathology of this dislocation is now well known, from a case which was carefully dissected and published by Professor R. W. Smith, *Dublin Journal of Medical Sciences*, 1872. (See Holmes' Surgery.) This dissection showed that the head of the bone, carrying the interarticular cartilage with it, had been thrust between the two heads of the sterno-mastoid muscle, and lay in contact with the opposite clavicle. The sterno-hyoid muscle was behind it; the sternal tendon of the sterno-mastoid was tightly stretched over it, forming a considerable prominence during life; the rhomboid ligaments were ruptured, as well as the capsule of the joint. In my case, the clavicular fasciculus of the sterno-mastoid was carried with the bone.

Professor Gross says dislocation of the clavicle, as compared with fracture of that bone, is rare; there being probably fifty cases of fracture to one of dislocation. The cause of this remarkable difference is to be found in the exposed situation of the bone, and the great shortness and strength of its ligaments, which render it more liable to yield in its continuity than at its articulation with the sternum or scapula. Erichsen expresses nearly the same opinion.

Dr. Gross further adds: "Luxation upwards is extremely rare, so much so that some of the best surgeons doubted the possibility of its occurrence; but within the last twenty years the cases reported by McFarlane, Baraduc, and Malgaigne, establish its claim to the distinction of a new species." (Vol. II, 4th ed., p. 47.)

Malgaigne has collected four well authenticated cases of this dislocation, and says reduction is sufficiently easy, but thinks a perfect retention impossible, although the remaining deformity is but slight; and in no case has the function of the arm been seriously impaired.

*This patient was presented to the Marion County (Ind.) Medical Society, May 14, 1878, and examined by some thirty members, who united in the opinion that the result was as perfect as attends the treatment of dislocation in other parts of the body by the most approved methods.

Professor Hamilton saw one case in consultation with Dr. Rochester. They molded a gutta percha splint to the clavicle and ribs; but notwithstanding all this the bone became displaced. (*Vide* Hamilton, Fractures and Dislocations, 3d ed., 1866.)

Holmes states that this form of dislocation is extremely rare, and that hitherto treatment has been unsuccessful, though a good use of the arm may be anticipated.

Mr. Erichsen (last edition, 1878,) says upward dislocation is extremely rare, there being but eight cases on record. He adds: "I doubt if the bone, though replaced, can be maintained in a good position."

Dr. Gross remarks with reference to the various dislocations of the clavicle that, seeing how difficult it is to keep the bone in position, he would not hesitate to fasten the ends of the bone with a silver wire.

Most authors agree that the treatment of fractures and dislocations of the clavicle, as compared with that of other bones, is somewhat unsatisfactory. I offer the suggestion that the lack of satisfactory results is due to the difficulty in carrying out the following most important principle in the treatment of fracture or dislocation, namely:

First. The bone or bones must be replaced in normal position and retained there, fixed and absolutely immovable.

Second. We must not only *place*, beyond any possible motion, the bone or bones dislocated or broken, but immobilize also all bones, joints and structures contiguous to, or in any way associated in function with, the dislocated or fractured bone, either by muscular attachment or continuity of osseous structure.

To carry out this principle in the treatment of the clavicle, we must suspend motion as far as possible in the dorsal region of the spine, in the sternum, ribs, humerus and scapula.* To do this, we must have something that will assume the exact form of the entire thorax, and when set

* "Besides, even in the common respiration, the costæ and sternum aforesaid, where the other end of this bone is adnected, together with motion of the diaphragm, rising and falling, especially if the same be extraordinary, as in coughing and sneezing, are able to undo your work; not to mention the situation thereof, less capable of being so well secured by bandage as many others. All which, duly considered, it is no wonder that upon many of these accidents, although great care has been taken, these bones are sometimes found to ride, and a protuberance is left behind, to the great regret particularly of the female sex, whose necks lie more exposed, and where no small grace or comeliness is usually placed." (*Vide* Hamilton on Fractures and Dislocations, ed. 1866, p. 189; from the "Art of Surgery," by Daniel Turner, Vol. II, 1742.)

shall retain its shape. I know of nothing that will do this so effectually as a plaster-of-paris jacket, carried if necessary over the shoulder, molded well into the axilla, around the scapula, and between the *ribs*.

In conclusion, I reassert my opinion, founded on a very considerable experience both in civil and military practice, that the success heretofore obtained by the use of the numerous appliances for fracture and dislocation of the clavicle, has been contingent on their fulfillment of the following condition, namely: the bone fractured or dislocated, and all contiguous joints and structures, must not only be placed but *maintained* in a condition of *absolute* immobility.

ON THE ETIOLOGY AND TREATMENT OF UNAVOIDABLE HEMORRHAGE.

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Inasmuch as there appears to be a persistent determination on the part of some friends, either to misapprehend or misrepresent my views in regard to the treatment of unavoidable hemorrhage, I regard it as due to myself, and the more perfect understanding of others, that I should again trespass upon the time of this association while endeavoring to present my relations to the literature of the subject in a manner that may defy future misconception. In order to the accomplishment of this end it is essential that we should draw in bolder relief the lines which in so marked a degree distinguish the *unavoidable* from the *accidental* variety of this accident.

In commenting upon the subject of my speech made on this floor at the last session, in which I urged the tampon as an all-sufficient remedy in strictly unavoidable hemorrhage, but only as an occasional application in the accidental form, my friend, Dr. Haughton, favored the society with an elaborate presentation of the old and long since abandoned theory of Desormeaux, on the "Etiology of Placental Hemorrhage," as applicable to the case in question. Recognizing the speech as a mere rehash of an argument offered by the doctor a month or two prior, at a meeting of the County Medical Society, when the subject of unavoidable hemorrhage was under discussion, I did not reply to it; since on the occasion referred to, I had protested against confounding the accidental with the unavoidable variety, and above all things making the exclusive tampon treatment in any way responsible for the management of accidental flooding. This I thought might be sufficient to fully and clearly define my position, and to forcibly present the distinctive characteristics (so entirely different in etiology, and necessarily demanding different treatment,) as to well nigh, in my opinion, settle that question with all present.

My astonishment, however, may be imagined when at the next assembling of the State association, less than two months later, we were presented with what in all other respects was a clever compilation of the current literature of placenta previa by Dr. Parvin, in which not one word was said of the distinctive varieties of its flooding, not an intimation of any new remedy for the unavoidable. This utterly ignoring of my method of treatment, of which he had the grace to say at the county meeting above referred to, that he was so favorably impressed with its promised efficacy that he should give it a trial upon the first occasion which offered in his practice, is a problem of difficult solution.

That this distinction, however, is of grave importance in a practical sense, there is, we think, no room for doubt. So marked a difference in etiology unquestionably necessitates a widely different treatment. One form of the accident results, as is now admitted generally, from mechanical injury, while the other is known to be due to physiological action alone. Clearly, therefore, nothing can lead to intelligent practice without a full appreciation of this difference of cause.

It is probably familiar to some of the gentlemen present that M. Stoltz, a German physiologist of eminence some fifty years ago, pointed out the true nature of the process by which the neck of the uterus is softened, and the time at which its internal os commenced to dilate, exposing the errors of the doctrines which were previously held and which had been supposed to exert a most important influence physiologically upon the cause of what is now recognized as purely accidental hemorrhage.

To these views Cazeaux gave his hearty assent, and, in his own language, "constantly asked attention to them since the year 1839." He assures us that "the neck does not shorten in the way which has been described; it preserves its entire length until the last fortnight of pregnancy, and then its shortening is accomplished by a different mechanism from that taught by authors. Its upper part (the internal os) does not spread out so as to contribute to the enlargement of the cavity of the body, but suffers a sort of collapse which brings the two orifices nearer together, at the same time increasing the central and extending its transverse diameter at the expense of the vertical."

Playfair says on this subject, "It, flooding, was for a long time supposed to depend on the gradual expansion of the cervix in the latter months of pregnancy, which separated the abnormally placed placenta. It has been seen, however, that this shortening of the neck in this way, is apparent only, and that the cervical canal is not taken up into the uterine cavity during gestation, or at all events, only during the last week or so." Of

course, then, up to the commencement of this change, the internal os being hermetically sealed no hemorrhage can take place, which may be properly designated unavoidable.

The loss of relation which was formerly supposed to exist between the uterus and placenta during the latter months of gestation, and assigned as the cause of unavoidable hemorrhage, is thus proven to have no existence until within ten or twelve days of full term, and hence all cases occurring prior to this period are justly chargeable to accidental causes, having, in fact, nothing to do with the dilating and softening processes of that organ. In finally disposing of the subject, Playfair says: "Dr. Matthews Duncan has recently investigated this entire subject, and maintains that hemorrhages (referring to those which occur from placenta previa in the last few months of gestation,) are *accidental* and not *unavoidable*, being due to precisely similar causes as those which give rise to the occasional hemorrhages when the placenta is normally placed. Separation of the placenta from the expansion of the cervix he believes to be the cause of flooding after labor has commenced, and then it may be strictly called *unavoidable*, but hemorrhage," he goes on to say, "is *comparatively seldom produced during the continuance of pregnancy.*" This authority, recent and able, notwithstanding, the very learned reviewer of my speech, as reported in the October number of *The American Practitioner*, quotes with considerable self-complacency the authority of Trask, who wrote twenty-four years ago, when the doctrines of Desormeaux were generally accepted, to prove my want of knowledge of the literature of the subject, when I ventured the assertion that "instances of fatal flooding were comparatively infrequent prior to full term."

In Barnes' work I discover nothing of interest touching the subject under consideration but a quotation from Rigby, in which he (Rigby) draws a broad distinction between accidental and unavoidable hemorrhage, and regards *manual extraction* in the latter variety *as necessary* to save the mother. He (Barnes) says further, "that almost all authorities concur in accepting the doctrine and adopting the practice."

Thus disposing of the nature and cause of the malady in question, we shall proceed to inquire into the treatment which has the sanction of authorities up to the present time.

Taking it for granted that what is "alleged to have been said years ago" on so grave a subject as the management of one of the most formidable and fatal accidents to which the puerperal condition is liable, would, if therapeutically valuable, be transmitted through the later standard works,

we have selected for examination a few only of those which are of recent origin, and which represent the literature of the last ten or twelve years. It will be my object, in referring to these authorities, to show that, though they all favor the application of the tampon under certain restrictions, *none*, with a single exception (so far as I can discover), propose its use, in any form of flooding, as an *exclusive reliance.*

Of those writers, we make our first extract from Schroeder, a late and most popular German author. He says, while discussing the remedial agency of rupturing the membrane in certain aspects of the case: "It is, therefore, necessary to continue the tampon without puncturing the membranes, until the presenting head be firmly pressed against the lower segment, thus stopping the hemorrhage, or until the os is so far dilated as to admit the hand in *turning.*" And further on: "Is is always best for the mother, and especially the child, to *turn* as soon as practicable."

In his *Guide to Practice*, an admirable compendium of obstetrics, recently produced in London by Dr. Roberts, he used the following language: "Version is the accepted treatment in a majority of placental presentations. When the os is dilated or dilatable, and the patient is not exhausted by excessive flooding, *turning* gives the greatest chance of life ot the child and recovery of the mother."

In Medows' *Manual of Midwifery*, also a recent publication of good English authority, we find the following: "If the os is undilated the plug is the first thing to be tried, and if well applied is pretty certain to accomplish the object, and we may safely wait for uterine action to dilate the os. After a few hours, more or less, the plug may be removed, and, if thought fit, the hand introduced and the child *turned*, and the delivery accomplished." Supposing, however, he goes on to say, "that uterine action is tardy; that the loss, though for the present controlled, has been severe and seems disposed to recur when the plug is removed; then the membranes are to be punctured," etc., etc.

Now, it is in precisely such a case as this that the persistent use of the tampon, without resort to rupturing the membranes (so sure to make place for internal hemorrhage), that our method displays its highest powers, guaranteeing the perfect safety of mother and child.

Adding his testimony to the occasional advantages of plugging in uterine hemorrhage, Leishman observes: "It, plugging, is merely a temporary expedient, which is employed with the view to ulterior objects;" and that "the operation of turning is that in which the great majority of experienced practitioners *still* place their greatest confidence."

On the contrary, I hold the plug, in unavoidable flooding, to be a most valuable *permanent* measure.

Considering the various methods of treatment of hemorrhage, under placental presentation, Playfair writes of plugging: "The best way is to introduce the sponge tent, of sufficient size, to be kept in situation by the vaginal plug; or, if preferred, a Barnes' bag may be used for the same purpose. This form of plug can only be used as a temporary expedient." Again: "*Turning* has long been considered the remedy *par excellence* in placenta previa. Much harm, however, has been done when it has been practiced before the os was sufficiently dilated to admit of the passage of the hand." Much better, in my judgment, not to practice turning at all in any other than cases of transverse presentation."

Dr. Tyler Smith, says Byford, "expresses the opinion of the profession when he declares emphatically that turning *is the* operation for placenta previa." He, (Byford) however, in the last edition of his work, while he fails to distinguish sufficiently the varieties of flooding arising under placental implantation, partially or entirely over the internal os, and thus losing half the value and force of his very practical suggestions on the use of the tampon, has nevertheless to my mind furnished the best rule of treatment for the unavoidable variety to be found in the books. Detailing one very interesting case in which he relied solely upon the use of the tampon in the successful termination of the case, saving both mother and child, he goes on to say: "The plug is applicable to cases where the loss of blood is very great, and the patient so much prostrated as to make her incapable of enduring the fatigue and additional loss of blood from turning." "I believe," he continues to remark, "that this unnecessary interference by introducing the hand and turning has had more victims than unaided nature would have made in placenta previa. The introduction of the hand necessitates a fearful loss of blood in spite of the most dexterous management."

These sentiments, so well expressed, are in exact conformity with my experience for thirty years; and it is this experience which led me, in the strictly unavoidable variety, to adopt and rely upon the exclusive use of the tampon.

Have seen no cases in my practice (now comparatively limited) since my last communication on this subject, it affords me much gratification to be able to present the four following typical cases, in illustration of the efficiency of my method. One of these cases occurred in the practice of my friend Dr. Bigelow, of this city, in the year 1869. He kept no record of the case, but states, substantially, that the lady, residing two miles in

the country, was found much exhausted from the loss of blood, without pain, and only a partial dilatation of the os, but still a continued stream of blood passing. The diagnosis of placenta previa being made without out a moment's loss of time, the tampon (thorough packing of the vagina) was resorted to, and a T bandage applied; a few drachms of tinct. of ergot administered—and he betook himself to bed for a few hours sleep. About four hours after, he was aroused; labor pain, in the meantime, having come on. An examination revealed the fact that the tampon was being pressed upon from within; and, on its release from the bandage, a few moments later the tampon, placenta, and child were delivered without the additional loss of an ounce of blood. The child lived, and the mother recovered rapidly.

Of two cases reported by Dr. Newcomer, also of this city, the first occurred March 10, 1872. "Mrs. J. S., aged twenty-five; second child. The hemorrhage commenced soon after labor began. Diagnosed placental presentation; flooding excessive. Applied the tampon after the method of Dr. Mears. Tampon allowed to remain until it was forced away, with placenta, by head of child. Sat by the case four hours, when delivery was accomplished. Mother and child did well."

Second Case.—"Mrs. C. K., aged forty-one; seventh child. Diagnosed partial placenta previa. In this case there was slight hemorrhage for nearly a month before full term, easily controlled by opium, rest, cool drinks, and cool external applications.* When labor commenced, however, the hemorrhage became alarming; used the endoscope, and placed sponge, saturated with solution of per. sulphate of iron upon the os. Through the same instrument a thorough packing of the vagina was accomplished. A T bandage was applied now, with the view to retain the tampon in situ. In three hours the child was born; the after birth following very soon after. Mother and child, as in any ordinary parturition, did well."

The fourth case was reported by Dr. Harvey, as follows: "Mrs. S. A., multipara, aged twenty-two, residing on North Illinois street, of this city, sent for me on the fifth of February, 1871. Found hemorrhage profuse; weak pulse; very slightly dilated os; pain suspended. Applied at once through a speculum, a small ball of cotton, saturated with per. sulphate of iron; and upon it followed, with the same material, a thorough packing, gradually withdrawing the instrument, as the vagina was well filled; upon

*This is a case of probable complication with slight accidental hemorrhage; nevertheless, the application of the tampon succeeded well.

this applied a T bandage, and being very unwell left the case, now four o'clock in the afternoon, with the injunction to send for me when the pains became severer. At ten o'clock next day I was again sent for, but being still sick sent messenger for Dr. Comingore, who stated that, on his arrival at the house, he found the patient in active labor; and, upon loosing the bandage, the tampon, placenta, and child were delivered without flooding, in a few minutes. Child as active as usual, and mother made a good recovery."

Objections are argued to the exclusive use of the tampon system, on account of the fact that occasional cases are met with where the life of the mother is jeopardized, by internal hemorrhage, resulting from the damming up of the flow by the tampon. While we are not unmindful of the circumstance, that concealed hemorrhages of formidable proportions do occur sometimes, under the development of the uterus during gestation, we maintain that at full term, the developing process being at an end, the uterus a *plenum*, and its contents, with unruptured membranes, *incompressible*, no considerable occult hemorrhage can supervene, without the presumption of some elastic property of the fully distended uterine tissues, for which there is no authority. We have, indeed, no evidence of the fact that a disposition to yield continues after the full accomplishment of the physiological purpose of supplying space for the ovum, now no longer growing. On the contrary, its tissues appear to be firm and inelastic—of quite sufficient strength, we may imagine, to resist a hemorrhage which, up to full term, has been restrained by an epithelium of extreme delicacy and tenacity, keeping within its normal limits the blood which circulates so largely in the uterine sinuses.

In my opinion, therefore, such a contingency as an occult hemorrhage can exist only under one of two conditions, namely: First, a complication of the unavoidable with the *accidental* variety: in which case, a previous rupture of vessels from accident may account for an accumulation of blood not likely to take place when the rupture arises from purely physiological causes, as the area of bleeding surface in the latter case is necessarily circumscribed and localized within the cervix, which is exposed directly to the application of the astringent as well as the counter-pressure from the tampon. The second contingency, quite a supposable one, is where the membranes from the presentation of hand, foot, knee, elbow, or other unknown cause has prematurely ruptured, allowing the water to escape, and then leaving an unoccupied space for the accumulation of blood. These, nevertheless, must be regarded as exceptional cases; the rule being that neither condition is met with in a vast majority of cases.

And, since it is quite competent for any intelligent physician to ascertain the existence of such complication before using the tampon, it must be difficult to find an excuse for a sole dependence upon it in either case.

I have before distinctly avowed that my favorite method of treatment was applicable only to the strictly unavoidable variety, and that its safety and success depended upon the membranes being found intact when the application is made, and the assurance is had that no complication with the accidental variety exists.

In presenting this paper for the consideration of the society, I have endeavored to make the following points:

1. That modern authorities ignore all treatment in the unavoidable variety of hemorrhage, the methods of Simpson and Barnes included, and fall back upon the old plan of artificial dilatation of the os, rupturing the membranes and turning.

2. That there has been a general failure on the part of authors to draw sharply the line which distinguishes the two varieties of hemorrhage resulting from placenta previa.

3. That the recognition of such distinction is of the highest practical importance, involving as it does a great difference in remedial agency.

4. That the application of the tampon in hemorrhage from placenta previa, *with* or *without* the distinction alluded to, is regarded by authors as only a *temporary expedient.*

5. That in no instance that we discover is a case recorded, except by Dr. Byford, above referred to, (and that quite recently,) in which exclusive reliance was placed upon the tampon in the unavoidable variety.

6. That the best form or composition of a tampon is, first, a small piece of sponge saturated with per sulphate, per chloride or per nitrate of iron, introduced, after thoroughly removing the coagula, as near as may be applied to the bleeding vessels, when its prevalence produces a temporary arrest of hemorrhage; (this is best accomplished through a modern speculum or endoscope;) secondly, upon this sponge the packing with charpie, through the same instrument, is without delay commenced and carried on, gradually withdrawing the speculum, until the vagina is firmly packed; thirdly, if the labor is not favorably progressing, the work is not complete without a T bandage, which being applied will enable the attendant to wait at leisure until pains, if they are flagging, are provoked by use of ergot, or the os, if not sufficiently dilated for delivery, allow, without exposing the patient to danger from flooding, time for full dilatation of the natural process.

In conclusion, I can assert, from my own knowledge, that when such

an instrument properly adjusted, is employed, no further drop of blood need be lost, or life endangered, until delivery is completed.

Now, in just what proportion the death rate to mother and child is due to this, the unavoidable division of placental hemorrhage, under the popular modes of treatment, there are, so far as I know, few reliable statistics to show.

On this subject, Dr. Rigby, whose authority was, at his time, regarded of the greatest weight, declares "that a large majority of fatal cases of this description" (meaning, doubtless, *all* cases from placenta previa) "occur at full term;" while, on the other hand, we have the statistics of Trask to prove that twenty only, out of forty-four per cent., of these hemorrhages occur within the ninth month. It will be seen, therefore, that, accepting the statistics of Trask as the only reliable data at hand, nearly one-half of the fatal results of these hemorrhages are due to physiological causes, and are amenable to the exclusive use of the tampon treatment, as we believe.

When it is reflected that under turning to deliver, and other popular methods, but one out of three children, and one out of five mothers—as estimated by best authorities, a few years since—were victims, we think ourselves warranted in urging the trial of a method, as appears from the above recited cases (placing my own thirty years experience out of the question), at least feasible; and whether it be a new device or the revival of an old remedy, we alike earnestly commend it to the favorable consideration of the profession.

PLACENTA PREVIA.

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The abnormal position of the placenta over the mouth of the uterus is an accident attended with so much danger to the patient, so much anxiety to the physician, and one in which widely different views are entertained by the profession as to its proper treatment, that we regard this subject as among the most important for our consideration and future investigation. Although valuable papers have already been presented to our State Medical Society on placenta previa, still the subject is far from having been exhausted; and from the opposite modes of treatment recommended is certainly still worthy of our most careful investigation. It is more than probable that many of our physicians, whose range of practice is principally confined to the country, have a large amount of valuable unpublished experience on this subject, which, if collected in the form of statistics, would throw light on the frequency of the occurrence of placenta previa, the modes of treatment principally adopted, and the fatality attending this accident within our State. Our information on placenta previa is principally derived from those physicians whose practical experience seldom extended beyond the bounds of a city or a hospital, where consultations are readily obtained, and all the means at hand to encounter, in the most approved manner, this difficulty. Even under the most favorable circumstances the deaths in proportion to cases by the different modes of treatment at present adopted, is terrible. According to Simpson one-third of the mothers die, and more than half the children. A high mortality is also shown by Read and Trask; and in the *American Journal of Obstetrics* for 1875, page 182, we find the "results obtained in seventy-four cases of placenta previa, which occurred in Breslau, were, of the mothers sixty-one died and thirteen were saved, thirty-four children lived and forty were lost." It is stated "the methods of treatment were various." If this is

occasionally the proportion of deaths to cases of placenta previa which occur in our large cities under the most favorable circumstances for resorting to the present modes of treatment recommended, what is the proportion of deaths to cases which occur in the country?

In the United States, the number of inhabitants residing in the rural districts is greater than the population of our towns and cities, consequently, as placenta previa is an accident not governed by local causes, there would be more cases occur in the country than in the cities—probably on an average as three to one. Within the last twenty-five years there have occurred in the vicinity of Aurora, thirteen cases of placenta previa, and but one within the city. Probably many others have occurred within the county of which I have not been informed. If this number is the average for each county, we must have had within the State, during the last twenty-five years, between 1,100 and 1,200 cases. Census reports show that the mortality in Indiana for the year ending June 1, 1870, was for "affections connected with pregnancy, 165 deaths; for child birth, 148." How many of these were cases of placenta previa, is not known. Fortunately it is not of common occurrence—occurring only once, it has been estimated, in about 500 or 600 cases of obstetrics, but from the little that we know of its occurrence and fatality within our State, it seems to me to be a subject worthy of the investigation of a special committee, the object of which should be to collect statistics, and report to our State Medical Society at some future meeting. No such report has yet been made to our society; all the information that we have obtained on this subject, has been derived from volunteer papers. These papers, although valuable, have presented no facts as statistics of the occurrence of placenta previa within the State of Indiana.

As widely different views have been presented to this Society as to what should be regarded the proper treatment for placenta previa, we will give a few cases that have come under our own observation, and the treatment adopted; and, also, present the experience of other members of our society on this subject. But before doing so, I will direct attention to those cases which occur far away from assistance—over the broad extent of our country—and come under the care of physicians whose range of practice extends five, eight, ten, or fifteen miles into the rural districts, and who have to occasionally encounter this difficulty alone or unaided by professional assistance, and find that in the treatment, self-reliance, and prompt and efficient action are required, and from the responsibility assumed, such cases are attended with an anxiety which the physician whose practice is confined to a city, and who, surrounded by professional assistance,

and all the means necessary to treat such cases to the best advantage, seldom experiences in the same degree. It is to discuss the treatment of placenta previa occurring under such circumstances that I ask your attention for a short time.

A physician has a call into the country to attend a case of confinement In leaving home he is not aware that there is unusual danger in the case he is about to attend. After traveling several hours over bad roads, probably in the middle of the night, he finds, on arriving at the house of his patient, that the friends are alarmed—the woman has been flooding; she is pale; the pulse is small and feeble; the bed is saturated with blood; and, on inquiry, it is probably found that this patient has had occasional attacks of flooding for several weeks—but, as the woman was strong and vigorous, and the hemorrhages lasted only a few minutes, no danger was apprehended. On making an examination the vagina is found filled with clotted blood, the os is probably dilated to about the size of a quarter or half dollar, and immediately above it is felt the spongy mass of the placenta, revealing, beyond all doubt, the alarming fact that he has a case of placenta previa. From the loss of blood that has already taken place and the danger, which is so evident, consultation is desired—for it is his wish that another physician should bear a portion of the responsibility in the treatment of a case attended with so much danger and anxiety—but this patient is five or ten miles in the country, the roads are bad, hours would elapse before a physician could arrive, or Barnes' or Molesworth's dilators be procured. The physician feels that not a moment is to be lost, and that the lives of two human beings depend upon him alone—upon his prompt, skillful, and efficient action. This is no fancy sketch. I have had just such cases myself, and present similar cases as the experience of other physicians, and have no doubt that many such cases that have never been recorded have occurred in the practice of the physicians of our State. What is to be done in a case like this when, mind you, the physician is not in a city surrounded by professional assistants, but away in the country, far from his instruments, and conscious that every moment's delay is increasing the danger to his patient? At this point of our subject, let us briefly review the course of treatment recommended by some of our best authors for placenta previa.

Thomas, in his valuable paper, published in the May number of the *American Practitioner*, for 1877, tells us that the means for controlling the hemorrhage while the os dilates, are: First—Distension of the cervix by water bags. Second—Evacuation of the liquor amnii. Third—Partial detachment of the placenta. Fourth—Complete detach-

ment of the placenta. Fifth—The tampon or colpeurynter. Then, for hastening the delivery after the os dilates, ergot, version, forceps, and craniotomy. I will here mention that there are two other modes of controlling the hemorrhage and dilating the os, which Dr. Thomas has not alluded to; the one is the introduction of a globular rubber bag into the uterus—"intra-uterine tampon." This bag has a tube attached to it, through which it is either inflated or filled with fluid. Then, by making traction upon the tube the placenta may be compressed against the sides of the cervix, and, at the same time, this bag assists in dilating the os. This means was recommended by Dr. Chassagny, of Paris, in 1868, and is certainly worthy of a passing notice. It appears to me, however, that the object would be better accomplished by having the bag in the form of a truncated cone. This form would enable the head of the child, during labor pains, to rest on this bag, and assist in producing compression and dilation. This truncated cone could be made by having a string attached to the center of the top of the bag, and passing down through the tube. Traction on the string, before the tube was closed, would even make this bag funnel-shaped, which would enable the head of the child to readily rest within it. This rubber bag, it seems to me, would be better adapted to cases of partial presentation of the placenta than it would to cases where the placenta was centrally attached.

Another plan is the careful dilatation of the os uteri and partial separation of the placenta with the fingers, at the same time making compression against the bleeding vessels of the uterus and placenta, with a roll of muslin or cloth, which will act as a tampon, and also assist in dilatation. This roll of muslin, placed in the palm of the hand, can be forced upwards by the thumb or a uterine sound, so as to enable it to accompany the fingers as they dilate the uterus and separate the placenta. This plan is compression of the bleeding vessels, associated with dilatation of the os, and is a means always at our command, and may be found occasionally of inestimable value. These, then, are the means presented for meeting the difficulties encountered in placenta previa.

Returning now to the case we had under consideration, we see at once that Barnes' or Molesworth's dilators, or the rubber bag, are out of the question. The physician is five or ten miles from home, and has not the dilators or his instruments with him. Considering ourselves in his place, we then have at our command in the treatment of this case, the tampon, the separation of the placenta, the rupture of the membranes, and the forcible dilatation of the cervix. Shall we depend upon the tampon alone, as has been so urgently recommended in this society by one of our most

experienced and esteemed members,* or shall we depend upon the tampon until the uterus is sufficiently dilated to enable us to turn and deliver? My experience is not favorable to the tampon. Although there may be cases where the tampon has produced the desired effect, still it is a question worthy of our careful consideration, whether the mortality in the treatment of placenta previa has not been increased by the delay which necessarily arises from depending upon the tampon. The implantation of the placenta over the mouth of the uterus is an accident of nature which requires, in most cases, active, intelligent interferences, just as much as the accidental malposition of the child in arm presentation; and we know that in cases of placenta previa, where the placenta is centrally attached, the only safety to the mother is the delivery of the child, the delivery of the placenta and the contraction of the uterus, and that every moment's delay is attended with danger.

In discussing the value of the tampon in the treatment of placenta previa, it is necessary to examine for a few minutes the source and cause of hemorrhage. Upon this subject physicians are not agreed. Some regard it as principally uterine; others as almost entirely placental; while others again look upon it as being both placental and uterine; some believe it to be arterial; others as almost entirely venous. We know that the hemorrhage in placenta previa flows most profusely at the moment of a pain, and also that at each pain there is a dilatation of the cervix, and that this dilatation is producing a separation between the uterus and placenta, which tears or ruptures arteries, sinuses and placental vessels. We then see that there must be a ring of ruptured vessels *within* the cervix from which the blood is flowing. This ring progressively enlarges with the dilatation of the os. It is at the moment of the rupture of the vessels that the principle hemorrhage takes place. Now, then, is the vaginal tampon to arrest this hemorrhage and at the same time allow the os to dilate? The dilatation of the cervix separates the vessels upon which the tampon does not press. Its pressure is only upon the exposed surface of that part of the placenta directly over the dilated os, and also upon the outside of the neck of the uterus, while around the *inside* of the expanding cervix the vessels are being ruptured with each pain and pouring forth fresh blood.

We see at once that the principal hemorrhage flows from a circle of vessels the tampon can not reach, and that blood may accumulate with each pain, separating more extensively the placenta until this blood is forced into the uterus, producing a fatal effect—as is known in one of the cases

* Dr. Mears.

which I present. It may be said that the blood coagulates and closes the open vessels, but we know that the blood does not immediately coagulate—and even if it did, it would not instantly arrest the blood flowing from the circle of freshly ruptured vessels within the cervix, no matter what styptic may be used in addition. The slow and gradual dilatation of the cervix, while depending upon the tampon, prolongs the hemorrhage and ultimately too often exhausts the system, producing atony of the uterus; and when this dilatation has taken place, if podalic version is then decided on, the patient has become in that dangerous condition—the circulation so depressed that she may die even while the hand is in the uterus—similar to the case alluded to by our esteemed friend in his discussion on the treatment of placenta previa before this society in 1876.

There are cases, no doubt, where the tampon would be applicable; in those cases, for instance, where the hemorrhage was not profuse, where the os was but little dilated, where the labor pains are tolerably strong, and where there was evidence that the case was one of partial implantation of the placenta. In such cases it may be safe to apply the tampon, and wait a reasonable time for the os to dilate; but, if the hemorrhage is profuse, and there is evidence of a central implantation of the placenta, not a moment is to be lost. In such cases the danger of depending upon the tampon is the delay, the impossibility of completely controlling the hemorrhage, the danger that the blood may be forced into the uterus, and, another objection is, that it conceals the condition of the os, while the hemorrhage may be progressing to a fatal termination.

If we decide to not depend upon the tampon, shall we then resort to the plan recommended by Simpson—complete detachment of the placenta. This we know is death to the child, and will certainly not be resorted to if there is a possibility of success by any other method.

We have, then, a modification of the old plan of forcible dilatation of the os—using the hand, and, at the same time, a roll of cloth pressed against the bleeding utero-placental vessels as an internal tampon, while we separate a portion of the placenta; and, at the same time, produce as rapidly as practicable, mechanical expansion of the cervix to favor the expulsion of the child, or enable us to effect podalic version and delivery as soon as possible. By this means we have the tampon and forcible dilatation, while with the vaginal tampon alone we attempt to arrest the hemorrhage, depending upon nature to produce the dilatation.

This, of the different modes of treatment at our command, I think is by far the safest, as there is certainly danger to the mother until there is delivery of the child, the placenta and contraction of the uterus. I am

well aware that this mode of forcibly dilating the uterus is not exactly in accordance with what is regarded the proper treatment of placenta previa by members of our society. Dr. Parvin tells us in his valuable paper read before this society two years ago, "That it is in such cases of undilated os that the older obstetricians advised if the hemorrhage were threatening, forcible dilatation—a practice which will hardly find any advocates to-day." He says, however, a few pages further on in the same paper, that he would "dilate not indirectly, but directly, by means of hydrostatic pressure." But if we have not Molesworth's or Barnes' dilators with us, and are too far from home to safely wait until they are procured, are we to make no effort to accomplish the object by other means? We know that the great danger in such cases is from delay. Every ounce of blood that is lost is exhausting the woman, and producing more or less atony of the uterus; and certainly there must be less danger from a cautious, though forcible dilatation of the os, and delivery, than there is from delay, when there is a continuous loss of blood, which we know, if unchecked, at last prostrates the system below the point of reaction. We believe that the treatment recommended by Smellie in 1752: "Attempt to forcibly dilate with the hand, and deliver at once," was far safer than to delay active interference, or depend upon a vaginal tampon. It is more than probable that where one patient has died from the effects of forcible dilatation of the os with the hand, hundreds have died in placenta previa without being delivered. With cautious and judicious management, we may accomplish with the hand almost all that we can with the rubber dilators. It can be made conical in form, and can be used as a dilating wedge, imitating to some extent the mechanical expansion of the cervix by the "bag of waters;" its motions are always under intelligent direction; we know exactly what we are doing. We can bring down the edge of the placenta; compress it during a pain—at the moment of flooding; and a roll of cloth pressed into the palm of the hand towards the os will give it almost a smooth and uniform pressure upon the bleeding vessels. I believe, then, that by careful manipulation with the hand, accompanied with a tampon, we can accomplish nearly, if not quite all, that we can with Barnes' dilators—dilate the uterus, and at the same time compress the bleeding vessels. Although this compression may not completely arrest the hemorrhage, still it has a tendency to prevent a sudden gush of blood while dilating the os.

It is the manner in which the os dilates in placenta previa that generally decides the fate of the patient. If hemorrhage continues, and the os remains undilated, we know that the woman will die undelivered. If the pains are strong, and the os rapidly dilates, the placenta may be forced

before the head of the child and the woman delivered before fatal hemorrhage has occurred. If the os dilates slowly, the woman may sink from loss of blood soon after the child is born, although delivered by natural means. We know that the hemorrhage in placenta previa if not arrested *must* produce death. Forcible dilatation and delivery *may* produce injurious consequences, but it is almost certain to arrest the hemorrhage. When podalic version is effected, hemorrhage is nearly always immediately arrested by pressure in bringing down the feet and body of the child upon the bleeding surface of the utero-placental vessels. In placenta previa, podalic version (as soon as the hand can be introduced) is generally easily effected —for the contractions of the uterus are in most cases enfeebled from loss of blood, and present but little resistance.

It may be said that there are cases where the os is rigid and does not dilate, consequently there would be difficulty in such cases in dilating the os and delivering by podalic version. This we know is occasionally the case, as we have rigidity of the os from two causes—spasmodic rigidity and fibrous or cartilaginous thickening, "active and passive." If the rigidity is of the spasmodic variety, the loss of blood attending placenta previa is almost sure to bring about relaxation—as the abstraction of blood is one of the principal remedies recommended to relieve this difficulty. If the rigidity depends upon the fibrous or condensed tissue, there would be a strong reason for resorting at *once to incision*—the remedy recommended for this form of rigidity—an operation attended with but little danger comparatively, and one that would enable us to introduce the hand and effect delivery almost immediately. We are told that in such cases we must apply the tampon and wait until the os dilates. But it would require hours to bring about sufficient dilatation of a fibro-cartilaginous os, and during all that time the uterus would be losing its power, and the patient sinking from loss of blood. I would ask, is there not less danger in treating such cases at once according to the rules laid down for the treatment of a rigid os, as recommended in tedious labor, than to wait for the feeble uterine pains to effect this dilatation, while there is so much danger from a continuous stream of blood bringing about irrecoverable prostration? In the language of McDonald, applied to such cases: "Nothing can be gained by delay, * * * so soon as the bleeding is really serious and likely if persisted in to endanger the life of the mother, then I hold we are bound at once and without fear of any evil consequences to proceed to dilatation and delivery." This is the practical or common sense view of the subject, for we know that if the hemorrhage is not arrested death follows, and also that the uterus in time loses its power, and if we delay, the time

arrives when the system becomes so prostrated from the loss of blood that the shock produced in the attempt to deliver may cause death. If the placenta is centrally attached, death is likely to be the consequence, unless there is proper interference—dilatation of the os and delivery of the child. Although when the os is rigid the hemorrhage may not be profuse, still there is drainage, a flowing with each pain, which will end in death if not checked. It is more than probable that many cases of placenta previa, which have terminated fatally after podalic version, would have terminated differently had the same means been resorted to at an earlier period; and it is also probable that the delay in attempting to free the uterus from this dangerous accidental implantation of the placenta, has added greatly to the mortality of placenta previa. We therefore regard the question as worthy of our most serious consideration, whether it is not better to risk the danger, not only of forcible dilatation, but even *incision* and delivery at once, than let the patient become irretrievably prostrated before we make an effort to deliver—as we know that delivery and contraction of the uterus are the means by which the patient is saved. In many cases premature delivery, as recommended by Thomas and others, would probably be the safest course of treatment. But I do not think physicians will resort to premature delivery when placenta previa is merely suspected from a slight hemorrhage occurring during the seventh or eighth month of pregnancy, for the reason that it is almost impossible at first to make a clear diagnosis, or tell whether the case is one of partial or central implantation of the placenta. This can only be told as the os dilates. If the case is one of only a small presentation of the placenta, premature delivery would scarcely be justified. It is not invariably the case that there are premonitory signs prior to the commencement of labor that would lead us to suspect placenta previa. In a fatal case that came under my notice, there had been no premonitory hemorrhage. As a large portion of the cases occur in the country, where medical assistance is not readily procured, and where the physician is seldom sent for until labor has commenced, this mode of obviating the danger in such cases is not likely to be adopted. But in those cases where the hemorrhage is profuse during the seventh or eighth month of pregnancy, and the patient resides some distance in the country, and the physician is sent for in time, and the evidence conclusive of placenta previa, there can be no doubt but that premature delivery would be the proper treatment. But there must be some other mode beside premature delivery to meet the dangers of placenta previa.

Experience shows that the different modes of treatment at present recommended are unsatisfactory, and that additional means must be

resorted to before the mortality of this accident is lessened. We know that the only safety to the patient in unavoidable hemorrhage is delivery, and delivery can not take place until there is dilatation of the os, either by natural or artificial means. If the os can be rapidly dilated before the uterus has lost its power, labor may be terminated by natural means; but we know there are cases of placenta previa where nothing but rapid dilatation can save the patient, and in such cases we think there is less danger from the effects of forcible dilatation or even *incision* of the os than there is from the hemorrhage consequent upon delay. But, has there not been an unneccessary apprehension of danger from injury to the os in forcibly attempting to dilate in placenta previa. Barnes and others, I am fully aware, disapprove of forcible dilatation; but we know that in a large proportion of cases of labor the os is more or less ruptured, without being followed by serious consequences, and the danger from slight laceration of the cervix is nothing in comparison to the danger from hemorrhage, arising from the slow laceration of the vessels, as the placenta is separated from the uterus during the advancement of labor. We have numerous instances on record where, from vigorous pains, "the cervix uteri, in part or entire, has been torn off." These cases, Churchill says, "though involving some danger, do not generally prove fatal." It is frequently the case that the lip of the cervix becomes caught between the head and symphysis pubis, and retained until it becomes edematous from pressure, and no very serious consequences follow.

Since the invention of the metrotome, the os and cervix have been expanded (incised), and divided for dysmenorrhea, sterility, and atresia, in hundreds of cases, without unfavorable results; even the operation of trachelotomy, or the amputation of the cervix, is not regarded as a very dangerous operation. I see, in a recent number of the *Clinic*, a paper copied from a St. Petersburg journal, of March 11, 1878, where free incisions were made in the cervix, in a case of atresia of the gravid uterus, with perfect success. The writer says: "There was little pain or hemorrhage, and the case shows how little danger attends this by no means insignificant surgical operation—the patient recovering without fever or other untoward event."

May not free incisions of the cervix yet be regarded as one of the means of properly treating placenta previa, for it is evident that no *one course* of treatment can be adapted to all cases. If called in the country to a case of obstetrics, and we had not Barnes' or Molesworth's dilators with us, and found that we had a case of placenta previa, the placenta centrally attached, and the os but little dilated, with evidences of fibrous thickening, the pains

making but little impression, but sufficient to produce a continuous hemorrhage, this hemorrhage beginning to make an impression on the circulation, and after making efforts with the hand and our tampon, we were unable to effect dilatation, I ask, in a case like this, whether we would not be justified in incising the cervix—an operation which would enable us to effect almost immediate delivery?

Although the danger from incision of the cervix is not great, still we know that there is danger either from inflammation, from cellulitis, septic peritonitis, or a very slight danger from hemorrhage. But the statistics of mortality from operations on the cervix would probably be only one death in about one hundred operations, while the deaths from placenta previa are about one in every three or four cases, showing the danger from incision or slight laceration of the cervix as scarcely any thing in comparison to the danger from the hemorrhage, arising from the slow laceration of vessels, as the placenta is torn from the uterus in placenta previa during the progress of labor.

We present thirteen cases of placenta previa, and their treatment. These cases are not brought before the society as offering any thing new, but of presenting additional evidence of the necessity of prompt and efficient action in the treatment of placenta previa, the danger from delay, the evidence that blood may accumulate within the uterus and produce fatal effects after the tampon has been skilfully applied, and also evidence that there is more danger from the continuous hemorrhage accompanying placenta previa than there is from the forcible dilatation of the uterus, and immediate delivery of the child. I am well aware that the detail of a few cases will prove but little as to what should be done in the treatment of placenta previa—a subject which has received so much attention from the profession; still, these cases may be of some value as statistics, and will at least show the course of treatment that has proved most successful with some of our Indiana physicians.

Case 1.—I was called in consultation with Dr. A. B. Haines, of Aurora, to visit Mrs. B., the wife of our Presbyterian minister—a lady of intelligence and refinement—age 40, mother of five children. The doctor informed me that he had been called five or six hours previous to attend Mrs. B. in labor. He found the os slightly dilated, but rigid. The case he regarded as one of placenta previa. He at once applied the tampon, with the hope of arresting the hemorrhage while the os dilated; but, he informed me that a slight hemorrhage had continued until about an hour before I was called. I found the patient pale, with rapid pulse, and very much prostrated. On examination, I ascertained there was no external

hemorrhage, and, as the tampon appeared to be skilfully and effectually applied, and the pains were feeble, we thought it prudent not to remove the tampon, but endeavor to sustain the strength of the patient and wait for reaction, which probably might be accompanied by dilatation of the os. Consequently, I approved the course of treatment pursued, and did not see the patient again. The doctor afterward informed me that the patient continued in a very prostrated condition; she had occasional light pains for six or seven hours after I saw her, but no external hemorrhage; when, rather stronger pains coming on, forced away the tampon and a large amount of coagulated blood, and she sank rapidly and died without being delivered.

Reflecting on this case, which was the first I had seen of placenta previa, I came to the conclusion that the tampon was an unreliable means to meet this difficulty, as I was well satisfied that in this case it had been most effectually applied.

Case 2.—I was called into the country, about four miles and a half, to attend Mrs. R. S., age 37. She was the mother of four children; labor generally easy and of short duration. On my arrival, I found the patient had been in labor about three hours; she was flooding profusely—the bed was saturated with blood; pulse small and rapid; she was pale; the pains were feeble, and the woman appeared very much exhausted. On making an examination, I found the os dilated to about the size of half a dollar, soft and apparently dilatable; immediately above it I could feel the spongy mass of the placenta, which appeared to be centrally implanted. I saw at once there was no time to be lost, for I had no confidence in the tampon and was too far away from any physician to send for assistance. Consequently, I made known to the friends the danger, and determined to make an effort to dilate the cervix, turn the child, and deliver at once. The woman was placed in the proper position; I held my hand for a few minutes in a pail of cold water, thinking it possible the cold hand might have a temporary effect in arresting the hemorrhage; the hand was introduced in the usual manner, and the fingers gradually insinuated between the placenta and uterus on the right side, as the placenta seemed to be centrally attached. The os and cervix dilated, without difficulty, sufficiently to enable me to introduce the hand; the membranes were ruptured, one foot brought down, and version easily affected—as there was scarcely any contraction of the uterus. I found that the cord was pulsating, showing that the child was alive. There had been a good deal of hemorrhage during the operation, but the moment the hips of the child passed the os all hemorrhage ceased. I gave a dose of the fluid extract of ergot, and allowed the hips to remain in the os a short time, as they acted as a tampon and

increased the dilatation. On the return of a slight pain I delivered without difficulty. Both mother and child were saved. I can not avoid the conclusion that had I introduced the tampon, and waited a few hours longer for the os to have more fully dilated, and then attempted to turn and deliver, that both mother and child would have been lost.

Case 3.—I was called into the country about four miles to attend Mrs. A. in a case of labor at the full period of gestation. Her age was 37. It was her fifth confinement. I found that the patient had been flooding profusely, and was informed that she had had occasional slight attacks of hemorrhage for several weeks previous. She was pale, her pulse was feeble and frequent, and she was having light pains every five or ten minutes, followed by increased hemorrhage. On examination I found the uterus low in the pelvis, the os dilated to about the size of a quarter of a dollar, firm and rigid, and immediately above it was the placenta, which seemed centrally attached. From the exhausted condition of the patient I thought it unsafe to wait longer for the natural dilatation of the os, but that immediate delivery, if possible, was necessary. Consequently, I determined to make an effort to dilate the os-uteri, turn and deliver at once. I had a conical tampon made of a piece of muslin rolled firmly and tied, varying from half an inch to two inches in diameter. I carefully endeavored to dilate the os with my fingers. It gradually yielded, and I separated the placenta on the right side, and at the same time forced into the cervix the conical tampon by which I could make firm pressure on the bleeding vessels of the uterus. In the partial separation of the placenta, which I made, the hemorrhage was very much increased for a few moments, followed by complete syncope. I heard one of the attendants say that the woman was dead. Without removing my hand I ordered the head lowered and cold water dashed in her face. I then introduced my hand as rapidly as possible into the uterus. In doing so I was fearful the os had slightly given way. The membranes were ruptured, and I had no difficulty in bringing down the feet. The hips were allowed to remain in the cervix for a short time to assist in dilatation, as all hemorrhage by this time appeared to be arrested. The woman revived in a few minutes, stimulants were administered, and she was delivered without difficulty, the uterus contracting and the placenta coming away almost immediately. The child, although very feeble at first, finally did well, and both mother and child recovered. It may be thought that I was scarcely justified in the heroic treatment adopted, but from the large amount of blood that had already been lost, and the rigid condition of the os, I was fully impressed that to wait for it to dilate and depend upon the tampon to arrest the hemorrhage, would be attended with death both to mother and child.

Case 4.—The next case that came under my notice was September 5, 1867; Mrs. B., age 30, in labor with her second child. This patient was under the care of Dr. James Lamb, of Aurora. The doctor had been called shortly before I saw her, and found such profuse flooding that he hastily wrote me a note requesting my immediate attendance in consultation. I found the woman pale and exhausted, the pulse small and rapid, and the bed saturated with blood. On making an examination, the os was found to be more than half dilated, and the placenta could be felt on the left side, showing that it was a case of partial placenta previa. The symptoms were so alarming, and the pains so weak, that it was evident that not a moment should be lost. We concluded to make an effort to deliver immediately by podalic version. As the woman was so much exhausted, the doctor felt a reluctance in undertaking the delivery—fearful that the patient would die during the operation. As there was no time to lose, the woman was placed in the proper position. I introduced my hand and had no difficulty in turning and bringing down the feet. I found there was no pulsation in the cord, and that the child was dead. As soon as the hips passed the os, all hemorrhage ceased. I had some trouble in delivering the head, but finally succeeded, and the woman made a gradual and perfect recovery.

Case 5.—This was a case of partial implantation of the placenta, and the hemorrhage appeared to be arrested by simply rupturing the membranes. November —, 1877, I was called to attend Mrs. N., age 28; primipara; full term. She had been in labor about an hour, pains coming on every five or ten minutes, accompanied with hemorrhage. She informed me that she had had a slight hemorrhage about a week previous. On examination, I found the os dilated to about the size of a quarter of a dollar, soft and dilatable, and the edge of the placenta could be readily felt on one side. I at once ruptured the membranes; the pains forced down the head of the child, which, from its pressure on the placenta and neck of the uterus, arrested the hemorrhage. The pains were feeble, but the woman was delivered in about twelve hours without further hemorrhage. Although this patient lost considerable blood she slowly recovered, and both mother and child are now living and well.

Dr. C. B. Miller, of Lawrenceburg, Indiana, sends me the following cases:

Case 6.—"Was called in June, 1862, to see Mrs. J. A., in labor with second child. Has had sudden, frequent, and alarming hemorrhages for the past two months. Found placenta attached nearly centrally over the os; patient fainted several times. Succeeded in perforating the placenta,

introducing my hand, turning and bringing down the feet, and safely delivering the child. The mother finally rallied, and ultimately recovered."

Case 7.—"This was a case of partial placenta previa, in which, at time of labor, there was severe hemorrhage. The placenta only covered a portion of the os—the free part admitting the passage of two fingers. Passed the fingers, and by making pressure succeeded in passing the hand. Found shoulder presenting; succeeded in turning and bringing down the feet. Case terminated favorably to both mother and child."

Dr. M. H. Harding, of Lawrenceburg, sends me the following case:

Case 8.—"Was called July 15, 1865, to see Mrs. H., in her fifth labor. Found her greatly exhausted, and suffering from repeated attacks of syncope from slight elevation of the head, arising from hemorrhage from central implantation of placenta over internal os. The os uteri was sufficiently dilated to permit the introduction of the hand to perforate placenta, and speedily terminated the labor by delivery by the feet; child was still-born. The mother succumbed to the slight post-partum hemorrhage that succeeded to the delivery, within thirty minutes, notwithstanding the use of stimulants and other appropriate means to sustain the system and restrain hemorrhage. Previous labors had been normal. If the patient had been seen at an earlier period, probably better results would have been obtained."

Dr. A. B. Haines, of Aurora, Indiana, furnishes the following case:

Case 9.—"Was called to see Mrs. Louden, October 23, at 6 P. M , two and a half miles in the country; age 30; had had two children. The patient had been suffering for the past few months with malarial fever, and had had one or two slight attacks of hemorrhage at the close of the eighth month and beginning of ninth month of pregnancy—now within a few days of full time. On examination found os very slightly dilated, firm and rigid; placenta presenting, flooding considerable, and pains slight. Applied cold, used the tampon, gave opium. In a short time the flooding ceased entirely, there was no pain, patient perfectly easy. Left at 12 M., with instructions to send for me upon the slightest return of pain or hemorrhage. Was called at 6 A. M. of the twenty-fourth. The patient had remained easy, with no flooding, until 5 o'clock A. M., when it returned profusely, but had again ceased when I arrived. Re-introduced the tampon, and sent for assistance, which arrived at 9 A. M., when it was determined to turn and deliver immediately, which was done—but the patient sank very shortly afterward. Mother and child were lost."

The following case I received from Dr. R. C. Bond, of Aurora, Indiana:

Case 10.—"I was summoned October 18, 1863, to see Mrs. John

Olslager, a multipara, residing three miles south of Aurora. I found her blanched and much exhausted from active uterine hemorrhage. The woman was pregnant and about six or seven months advanced, as nearly as could be determined. I at once applied cold to the abdomen, inserted a tampon, and gave large doses of acetate of lead. The hemorrhage was thus promptly arrested. But in less than a week the hemorrhage returned. I resorted to the same line of treatment with satisfactory results, no further active hemorrhage occurring for about one month. There was some passive hemorrhage occasionally during this interval. On the twenty-first of December there was another return of the profuse hemorrhage, which was controlled by cold, ergot, lead and opiates. On the twenty-seventh she was taken with labor-pains, probably at full term, accompanied with hemorrhage. Before I could reach the patient the loss of blood endangered her life, but fortunately I found the os quite well dilated. The placenta was attached mainly to the left side of the os, and by sweeping the internal os forcibly with my fingers, thus forcibly dilating it, and at the same time detaching the placenta, and a strong pain coming at this critical moment to my relief, the child's head was made to enter the vagina, and delivery soon followed with but little further hemorrhage. The hemorrhage was so great during labor, the patient being much enfeebled by former hemorrhages, that she never rallied from its effects. Subsequent to delivery I had the valuable aid of my friend Dr. Williams, of Rising Sun, but all efforts to save my patient proved unavailing. She died on the fourth or fifth day after confinement."

Dr. T. M. Kyle, of Manchester, Dearborn county, sends me the following case:

Case 11.—"Mrs. V., age 32; mother of two children, received a slight fall March 2. Three days after, slight hemorrhage appeared, with considerable pain in her back and hips. A physician was called; he gave her an anodyne and ordered her to remain in bed and keep quiet. At midnight, some ten or twelve hours afterward, I was sent for in great haste. I was told that Mrs. V. was flooding to death. On arriving at her bedside found her very weak. She had fainted a short time before I saw her. On examination I found that I had a case of placenta previa, with the os dilated about the size of a silver dollar, the head presenting. I at once began to make forcible dilatation with my hand in a cone shape in the neck of the uterus. Fortunately there was not very much resistance. As soon as I could reach the feet I performed podalic version, saving the mother. The child was dead. The woman had a slow convalescence. After a few months she regained her health and is now well."

Case 12.—Dr. H. C. Vincent, of Guilford, Dearborn county, sends me the following case:

"GUILFORD, IND., 1878.

"*Dr. Sutton:*

"DEAR SIR: In compliance with your request I give you the case of placenta previa which came under my care: Mrs. S., aged 34 years, has had four children (all living) previous to this confinement. Was called on November 5, 1869, on account of uterine hemorrhage, which had been moderately profuse for several hours. Is in her seventh month of pregnancy. On examination found the os undilated, and at the time of examination not a great amount of blood; but from the amount in the bed, was satisfied there had been considerable hemorrhage before I reached the house. She had been feeling well until the day of my visit. Gave her an opiate, ordered rest in a horizontal position, and to call on me if the hemorrhage should continue. Heard nothing more from her until January 3, 1870. Called in a great hurry; messenger stating that she was bleeding very profusely. As I was off several miles, I found her on my arrival in almost a comatose state, pulse very feeble, countenance pale, seemed almost in a dying condition. Ordered about an ounce of whisky, and as soon as she had taken it made an examination. Found the os well dilated, the bed and bedding saturated with blood, and blood still coming freely from the uterus. Stated the case to the husband, who wished to send for Dr. Harding as counselor. Told him I would be glad to do so, but that there was no time, as the child was perhaps already dead, and that his wife would be before he could go to Lawrenceburg, ten miles, and return. He then told me to go on, and do the best I could for her. I immediately introduced my hand, broke the membranes, found the placenta reaching entirely across the mouth of the womb, pushed it to one side with the end of my fingers, and passed my hand up around the child until I secured the feet. Drew the breech down into the pelvis, when the blood ceased to flow. Gave a dose of fld. ext. ergot, waited about ten minutes, when she had a good expulsive pain, which was the first of any amount she had had throughout the whole time of the operation. The child, with a little traction, was born in about one minute after the pain came on, and the placenta in about fifteen minutes afterward. The child was dead, and to all appearance had been for several hours. Gave half a glass of wine, with one-fourth grain of morphine. Staid with her from the evening of January 3 until the morning of January 4, at which time she was quite comfortable—slept some through the night, pulse getting stronger, countenance cheerful. Ordered wine and light nourishment, with perfect quiet. Re-

mained quite feeble for about two weeks, after which she gained rapidly and made a good recovery. She was at my house about three months ago in perfect health, and has had one child since without any trouble.

"In a practice of near thirty years this is the only case I have had of perfect placenta previa. I had three or four partial cases, where the hemorrhage was not profuse.

"H. C. VINCENT."

Case 13.—Since the meeting of the State Medical Society, Dr. S. C. Thomas, of Milroy, Rush county, sends me the following case, which shows most conclusively the danger from internal hemorrhage after the application of the tampon.

"MILROY, RUSH CO., IND., June 3, 1878.

"*Dr. George Sutton:*

"DEAR SIR: In compliance with the promise I made you at the meeting of the State Society, I send the report, in brief, of a case of placenta previa that was treated by Dr. F. M. Pollett and myself, jointly. The age of the patient was thirty; bilious temperament; not very strong physically, and yet never confined to her room in her life by sickness.

"Your friend,

"S. C. THOMAS."

"I was called to see Mrs. Narcissa Root, daughter of Dr. F. M. Pollett, during his absence, August 9, 1876. I found high fever, labored respiration, intense pain of the head, countenance anxious, and unable to stand on her feet in consequence of it always exciting very severe abdominal pains. For some days previous to this time she had been having morning chills and afternoon fever, attended with excruciating pain in the bowels. She stated to me that anti-periodics and anodynes had not in the least mitigated the symptoms. Supposing that I had a malarial disease to combat, I gave full doses of quinine, morphine, and alterative doses of calomel. I neglected to state that she was approaching, as near as could be ascertained, the end of the sixth month of gestation. Dr. Pollett returning August 10, he took charge of the case. He states that the morning chills, afternoon fever and pain continued, in spite of the best treatment that he could devise, for some weeks. At times the pains were so strong and expulsive in character that the doctor thought premature delivery imminent. She had been confined twice before, and her labors were comparatively easy; after which she made quick and good recoveries. During the first two gestating periods she enjoyed unusually good health; but from the time she noted the first symptom of pregnancy, in the last instance, her health began to fail, and she became very feeble—which condition continued up to the day of her death.

"November 11 and 12, 1876: She had some hemorrhage from the uterus, but her father thought not sufficient to excite alarm; he thought it was not more than frequently occurs in natural and uncomplicated labors.

"Dr. Pollett was summoned November 13 at 12½ o'clock A. M.. in consequence of sudden hemorrhage from the uterus, while his daughter was up over a bed vessel. He found, on arrival, that she was quite feeble, and much prostrated. The hemorrhage was preceded by a few feeble labor pains. On examination, he found the os uteri but slightly dilated, and very rigid; hence, the doctor was much puzzled in relation to the diagnosis of the case, but supposed it was a case of placenta previa. I saw the patient between 1 and 2 o'clock A. M.; found pulse feeble and rapid, face blanched, and much general prostration. Examination, per vaginam, revealed but slight dilatation of os, but I soon satisfied myself that we had a case of placenta previa. Although fully aware of the critical condition of our patient, and the necessity of immediate interference, the undilated and rigid condition of the os uteri seemed to preclude the possibility of a successful attempt. From this time until about 7½ o'clock A. M., our patient was entirely free from pain, and gave no evidence of hemorrhage excepting that she was gradually growing more feeble. She was seized with strong labor pains about 8 o'clock A. M., which were attended by considerable hemorrhage. The pains were not of an expulsive character, but simply strong tonic contractions of the circular fibres of the uterus.

"It was evident that the patient was rapidly sinking, and our fears were that we would not be able to deliver before death would ensue. All of our efforts up to this time to introduce the hand into the uterus were fruitless, because of the unyielding condition of the os. Most unexpectedly all pain ceased, and there was sudden relaxation and softening of the os uteri. Immediately after this we succeeded in rupturing the placenta, turning and delivering by the feet. As soon as the placenta was ruptured (which was easily accomplished) the uterus lost all contractile power, and the hand of the operator met with no resistance. When the cavity of the uterus was reached, there was found a large amount of clotted blood. This fact accounts for the gradual sinking of our patient during the time that the hemorrhage seemed to have entirely ceased. During the turning and delivery our patient sank rapidly, and only survived the birth of the child a few moments. She expired at 9 o'clock A. M.

"I know that there are those who aver that internal hemorrhage, in connection with placenta previa, is impossible, excepting where the membranes are ruptured, but I think the case above narrated will conclusively

show the theory to be utterly untenable. For at no time after labor began, until the final effort to deliver was made, was there the slightest evidence that the membranes were notin tact. The flow was purely hemorrhagic in character before the rupture of the placenta, and the clotted blood discovered on the introduction of the hand into the uterus was outside of the membranes."

DISCUSSION.

Dr. Theophilus Parvin, of Indianapolis—Mr. President: I am sure the profession is placed under obligations to these gentlemen for their practical contributions to one of the most vexed questions in obstetric practice. It is a question that has been under consideration for more than a century. Some of the greatest masters of obstetric science and art have given it special study, and devised original methods of treatment; still the last word has not been, probably will not be, spoken upon the subject, either in our own day or in that of our children.

Amid the variety of opinion and of practice, the uttered experience of these professional veterans must give valuable increase to our knowledge and help in our practice.

I have sometimes thought that the individual members of the profession might be compared to the composite eyes of some insects, each eye with thousands of facets receiving rays of light from a like number of directions, and thus the images of objects secured—one impression assisting, qualifying another, and perfect sight probably resulting from a combination of thousands of separate and distinct modifications of the nerve of vision. So we are in the ever shining light of truth; one perceives this, another that, a third something else; one has this, another that experience, and thus on through all the thousands of observers until by comparison of perceptions and by combination of experiences we may at last approximate certainty and undeniable facts.

In regard to the treatment of placenta previa, the profession, as I have said, has not been, and still is not, agreed. More than a century ago it was declared that in all cases where the hemorrhage is serious, early delivery is the indication. Obstetricians usually believe in this. They may differ, and do differ, as to the means by which it is to be effected, but as to the thing itself they generally agree. The immediate danger to the patient is from the hemorrhage and consequent loss of vitality. The loss of blood causes asthenia, and from this the mother dies; while the detach-

ment of more and more of the placenta no longer permits the oxygenation of the infant's blood, and the termination of its life is from asphyxia. It is one of the most natural things in the world—one of the very first things that suggests itself to the mind—when we find bleeding taking place, is to put our finger on the point of hemorrhage, press the bleeding surface, hold the bleeding vessel, plug up the opening; and, hence we find the tampon treatment of placenta previa was one of the earliest, now more than a century old. It is the most natural practice in the world, where there is hemorrhage, and I do not know that it makes any difference whether it is unavoidable or accidental, provided the placenta is previa. I do not think you can draw a distinction between these cases which is of the least practical utility, nor give us special guidance in treatment. It does not make any difference to you, as the practitioner, when you are called to a woman who is bleeding, with the placenta at the mouth of the womb, whether the detachment was accidental or unavoidable; she will die as surely and as quickly in one case as in the other, if the hemorrhage be great enough. So, practically, I say, it makes no difference whether the hemorrhage is accidental or unavoidable, provided the placenta is previa. You have not a moment to spare—no time for hesitation—provided the bleeding be serious.

The profession are agreed—at least a majority of its members are—as to the importance, in the interests of the mother and child both—the child being viable—that early delivery should take place, where the hemorrhage is serious. If you can not effect that by the unaided hand, you have as long ago as 1776 the method employed by Leroux, the tampon, which Velpeau has well said not only is useful to plug the mouth of the womb, but as a foreign body, and as a styptic, irritates the neck, changes the vitality of the uterus, arouses its contractility so as to determine the expulsion of the ovum. You will find, too, that this author, in his treatise upon Accouchements, the second edition of which was published in 1835, devotes considerable space to the consideration, both historical and practical, of the tampon in placenta previa, and quite as graphically as any one has since done, speaks of cases of its successful application—the tampon being the only treatment—where tampon and product of conception are expelled together from the genital organs.

Nevertheless the tampon can not always be, even in the hands of those most skillful in its use, and whose faith in its value is most absolute, the needed treatment or the exclusive method, for one out of eight or nine cases, we know, is a case of transverse presentation, where turning the child must be resorted to, whether the tampon is used or not.

Two years ago I read a paper advocating the use of Barnes' or Moles-

worth's dilators, not for the purpose of doing what nature might do, both safely and quickly, but to do what nature delayed to do. In the rubber dilator you have a perfect tampon, which may be made to vary in size with the size of the opening it is to close. It seems to me that as a rule we may thus best treat these cases; but, I do not believe that all cases should be treated exactly alike, for I have no doubt there may be emergencies where, for example, the tampon is the best thing, because most available. Dr. Sutton has some cases that I hope he will read to you, so that you may see what his experience with the tampon has been.

Suppose you adopt the practice especially advocated by Dr. Greenhalgh, of London, and Dr. Thomas, of New York, and which my own paper sought to uphold, viz: the induction of premature labor. You can fix the time for delivery just as you could fix the time for an amputation or for a lithotomy, and relieve the patient from the peril that hangs over her.

Cases of sudden death in placenta previa do not generally come unheralded. There is usually a warning given us, in the attacks of slight recurrent hemorrhage that anticipate and predict the severer hemorrhages. If Dr. Sutton happens not to have his dilators with him, he will, possibly, in many, if not most cases, have time to get them.

Like Dr. Sutton, I should be extremely glad to get the statistics of cases of placenta previa that may be in the possession of the members of the society. Let us unite our experience as far as possible.

And now, in conclusion, let me disclaim any want of proper respect for the opinions of those in this society with whom I differ, and express my regret that any thing I have written or spoken should ever have been so construed. Surely we, as members of a liberal profession, may differ in our theories of and practice as to these cases without the least personal feeling. Truth, scientific truth, professional truth, rises higher than individuals, and transcends individual interests. We are here to-day; to-morrow others take our places. This great wave of human life, in which we are now struggling, sweeps on, while another swiftly follows it, and buries us from among men. But meantime and ever, amid all this succession of waves, humanity and truth abide.

Dr. M. H. Harding, of Lawrenceburg—There is one feature of Dr. Mears' paper and practice that I have not seen noticed in any work upon the subject under discussion and I think it is especially due to him and to the profession that particular attention should be given to it. I refer to the use of the speculum, and the manner in which the tampon is applied. There is no other plan by which it can be applied with the same precision, or

with the entire confidence that the object has been accomplished—the filling of the vaginal cavity entirely, and without pain or inconvenience to the patient. Other methods are liable to fail, in consequence of incompleteness of the packing. It is Dr. Mears who first suggested (at least to my mind) the idea of using a cylindrical tube for this purpose, and it is upon that peculiar feature of his practice that, in my judgment, the merit of the whole proceeding depends, and the perfect and satisfactory manner in which the application is made.

Dr. Geo. Sutton, of Aurora—I will read an account of a single case. (Reads and then remarks:) I maintain what is said there, and believe, with the authorities, that very little or no hemorrhage can take place in a full uterus, when the membranes are not ruptured, at full term. There may be exceptions, but I think they will be found to be extremely rare. There may be one in twenty, or one in fifty—I doubt exceedingly whether they occur as often as one in fifty times; but, still, there is a large margin to go upon, if, instead of one or two, we can save seventy or eighty children out of a hundred—even, I apprehend, that we may save ninety out of a hundred.

Dr. Ward Cook, of Pendleton—By the statistics given by Dr. Sutton it appears that placenta previa occurs about once in five hundred cases, consequently the experience of any one man would be very limited. In an experience covering something over six hundred cases I have encountered placenta previa three times. The children perished in all three cases, while the mothers survived. One case I will refer to especially: It came to the full term, and, as is the case in placenta previa, according to my teaching and information generally, there was hemorrhage, more or less, from about the seventh month to full term. The hemorrhage in this case recurred every week or two. I ascertained then, as I had suspected before, the nature of the case—it was all from the mouth of the uterus. Labor seemed to be coming on favorably, and I was at first in hopes that it would terminate spontaneously; but, as labor advanced, the hemorrhage became fearful, and I thought my patient would die before delivery could be affected by the natural powers. I then resorted to turning, according to the directions given for that operation. The child perished, but the mother survived—although she, too, came very near perishing.

There is one thing I can not understand, and that is: how any applications can be made, how anything can be brought in contact with the bleeding vessels, when the bleeding vessels are up in the uterus, where a separation has taken place between the surface of the placenta and the uterine surface.

TRANSACTIONS.

TRANSACTIONS

OF THE

INDIANA STATE MEDICAL SOCIETY

AT THE

TWENTY-EIGHTH ANNUAL SESSION.

First Day.

MORNING SESSION.

The twenty-eighth annual session of the Indiana State Medical Society convened in the Lecture Room of Meridian Street Methodist Episcopal Church, in Indianapolis, on the morning of Tuesday, May 21, 1878, and was called to order at ten o'clock by Dr. L. D. Waterman, of Indianapolis, the President of the Society.

On taking the chair the President said:

Gentlemen of the Society:

I desire to express my thanks for the distinguished honor which you have conferred upon me in electing me to preside over the affairs of the Society during the past year. I ask your courtesy and forbearance during the present session, and hope that our meeting will be pleasant and profitable. I now declare the twenty-eighth annual session of the Society begun, and that the Society is ready to attend to such business as may be brought before it. The Secretary will call the list of delegates.

The list of delegates being called, the following persons answered to their names:

ALLEN—*J. R. Beck,* T. J. Dills, J. S. Gregg, W. R. Yuill.*
BENTON—J. Kolb, J. H. Whitcomb.
BLACKFORD—C. Q. Shull, *Samuel Mason.*
BOONE—*John F. Sims, W. P. Parr,* D. R. Walker, *A. G. Porter, Milton Lane.*
CARROLL—*C. Angell, W. M. Loop.*
CASS—*G. N. Fitch, J. Herman, N. W. Cady.*
CLARK—*T. A. Graham,* W. N. McCoy, W. H. Sheets.
DAVIESS—C. W. McDaniel, W. W. Lemon, *J. L. Moore.*
DEARBORN—E. P. Bond, *George Sutton, M. H. Harding,* A. J. Bowers, *W. E. Sutton, H. C. Vincent,* W. H. Terrell, W. C. Henry, J. R. Davis.
DECATUR—*John H. Alexander, John L. Wooden.*
DELAWARE—*T. J. Bowles, G. W. H. Kemper, John Horn.*
DUBOIS—T. Wertz, Charles Knapp, *R. M. Welman.*
ELKHART—*J. S. Dodge.*
FLOYD—*S. J. Alexander, E. W. King.*
FOUNTAIN—*G. C. Hays. B. L. Petro, W. Armstrong.*
GIBSON—V. T. West, *W. W. Blair.*
GRANT—*L. Corey, W. Lomax, L. P. Hess, A. Henley, S. C. Weddington, J. F. McKinstry, A. J. Bates, W. B. Lyons.*
GREENE—*S. C. Cravens, P. L. Broiullette.*
HAMILTON—*A. D. Booth,* J. P. Heath.
HANCOCK—*N. P. Howard, W. R. King, J. G. Stewart, S. M. Martin.*
HENDRICKS—*T. F. Dryden, F. C. Fergison, W. J. Hoadley, J. H. Brill.*
HENRY—*Wilson Hobbs, J. Cothrane, W. F. Boor.*
HOWARD—*R. Q. Wilson, H. C. Cole, J. McL. Moulder.*
JACKSON—Thomas Galbraith, George Q. Orvis, J. A. Stilwell, George O. Barnes.
JEFFERSON—*C. H. Wright, J. H. Mathews.*
KNOX—*B. F. Keith, J. W. Pugh.*
KOSCIUSKO—*S. C. Gray, C. W. Burket, T. Davenport.*
LAGRANGE—*John Dancer, E. G. White.*
LAPORTE—*T. Fravel, G. L. Andrew.*
LAWRENCE—*G. W. Burton, Ben. Newland,* J. M. Phipps, J. L. W. Yost.
MADISON—*William A. Hunt, O. H. Broadbent,* Samuel Fussell, *J. Stewart, C. C. Loder..*
MARION—*J. A. Comingor, F. J. Van Vorhis, R. N. Todd, I. C. Walker, I. H. Woodburn, T. N. Bryan, W. J. Carter, W. E. Jeffries, P. H. Jameson, F. S. Newcomer.*
MARSHALL—S. W. Gould, J. H. Wilson.
MIAMI—*O. C. Irwin, A. H. Robbins, J. O. Ward.*
MONTGOMERY—*E. H. Cowan.*
MORGAN—P. McNab, *H. C. Robinson,* J. H. Knight.
ORANGE—*B. J. Hon, E. D. Laughlin.*
PARKE—I. H. Gillum, J. S. Dare.

*Those in italics were present.

PIKE—*J. R. Adams*, D. H. Daniel, *A. R. Byers.*
POSEY—*M. S. Blunt*, W. M. Holton, *D. B. Montgomery*, S. O. Rawlings, J. M. Minnick.
PULASKI—S. W. Thompson.
PUTNAM—*G. C. Smith*, C. B. McNary, E. B. Evans, S. A. Hinton.
RANDOLPH—*L. N. Davis, N. T. Cheneworth, William Commons.*
RUSH—*S. C. Thomas, W. A. Pugh, John Arnold, M. Sexton.*
ST. JOSEPH—*Louis Humphreys*, G. V. Voorhees.
STEUBEN—*H. D. Wood, T. F. Wood.*
TIPPECANOE—W. F. Cady, *G. F. Beasley.*
TIPTON—*William M. Glass, A. B. Pitzer, W. Austin, W. N. Heath.*
VANDERBURG—*William A. Wheeler.*
VIGO—B. F. Swafford, *W. H. Roberts, S. J. Young, J. D. Mitchell, L. J. Willien.*
WABASH—H. Adar, J. H. Renner, *M. O. Lower*, F. H. Bloomer, G. P. Cheneworth, *E. F. Donaldson.*
WARREN—*J. Ross, S. C. Fenton.*
WARRICK—*S. L. Tyner*, C. J. Keegan.
WAYNE—*J. R. Wiest, J. F. Hibberd, C. N. Blount, J. W. Rutledge.*
WHITE—*R. S. Black.*

The President appointed the following committees:

On Credentials.—Dr. F. J. Van Vorhis, chairman; Dr. E. D. Laughlin, Dr. H. D. Wood, Dr. J. S. Gregg, Dr. J. H. Alexander.

On Ethics.—Dr. L. Humphreys, chairman; Dr. G. L. Andrew, Dr. B. Newland, Dr. J. R. Weist, Dr. S. M. Martin.

SECRETARY'S REPORT.

Dr. G. V. Woolen, Secretary, submitted his annual report as follows, which, on motion of Dr. Weist, was referred to the proper committee under the by-laws:

Your Secretary respectfully reports that he has collected from the various societies reported in last year's proceedings one dollar for each member reported, with additional six dollars from Hancock County Medical Society, and three dollars from Lagrange County Medical Society—to the amount, in the aggregate, of seven hundred and seventy-three dollars, which was duly paid over to the Treasurer.

I would further report, that in accordance with the action of the Society last year, I have collected the dues of each society reported here to-day—the assessment of one dollar per capita of all members reported—the aggregate of which is not yet ascertained.

I would respectfully call the attention of the Society to the fact that many of the county societies have not yet been incorporated as contemplated in the constitution of this Society; and to prevent difficulty from occurring, as in Hendricks county last year, it would seem that this Society would do well to give some authoritive expression in the matter.

Also, it has seemed greatly desirable to some of us, in arranging its business, that the Society should adopt some rules or by-laws; and I would suggest that a committee be appointed to consider them and draft them, if desirable.

I am glad to add a number of new organizations to the roll this year.

I have the honor to transmit to this Society resolutions calling attention to the need of a State Board of Health, from the societies of Hamilton, Posey, and Fountain counties.

Also, notice of the appeal taken by the society claiming to be the Hendricks County Medical Society to the American Medical Association last year.

Also, a protest against the admission of delegates from the Delaware County Medical Society to this session of this Society.

Also, an appeal from Dr. J. P. Bonsier, expelled from this Society several years ago, to have said action rescinded.

Also, the annual call of the Secretary of the American Medical Association, stating that "the delegates shall receive their appointment from permanently organized State medical societies, and such county and district medical societies as are recognized by *representation in their respective State societies*, and from the medical department of the army and navy of the United States."

Respectfully submitted,

G. V. WOOLEN, *Secretary.*

Moved, that the report be distributed to the usual committees.

The following papers were announced as present for presentation to the Society:

On "Fracture of the Clavicle," by Dr. Joseph Eastman, of Indianapolis.

On "Infantile Convulsions," by Dr. J. F. Hibberd, of Richmond.

On "Conservative Surgery," by Dr. L. Humphreys, of South Bend.

On "Basedow's Disease," by Dr. T. J. Dills, of Fort Wayne.

On "The Medical Witness," by Dr. Wilson S. Hobbs, of Knightstown.

On "Public Hygiene," by Dr. J. W. Hervey, of Indianapolis.

On "Wound in Abdomen," by Dr. L. Corey, of Grant county.

On "A Recent Epidemic of Small-Pox in Southern Indiana," by Dr. W. W. Blair, of Princeton.

On "Nasal Catarrh," by Dr. J. S. Dare, of Parke county.

On "Placenta Previa," by Dr. George Sutton, of Aurora.

The Secretary called attention to certain suggestions on the subject of a State Board of Health, contained in his report.

Upon motion of Dr. I. C. Walker, of Indianapolis, the committee appointed at the last annual meeting of the Society upon that subject was

continued, to-wit: Drs. Thad. M. Stevens, Wilson S. Hobbs, J. W. Hervey, and G. W. Burton.

Dr. Thad. M. Stevens, chairman, then submitted the following:

Resolved, That the committee on "State Board of Health," as now constituted, shall be called the "Indiana Health Commission," the present chairman being the secretary and chairman thereof.

The duties of such commission shall be to investigate as to the causes of diseases in the State and ascertain the proper means of preventing such diseases, and also do what is possible to obtain vital statistics of the State with reference to births, marriages, and deaths. All said commission shall retain their offices as long as they are members in good standing in the State Society. They shall have power, at any time, to petition the Legislature to confer upon them *police powers*, so that they shall be enabled to enforce such rules as they may deem necessary to remove sources of diseases, collect vital statistics, and forward any measures conducive to the health of the inhabitants of the State, and also to establish similar, but subordinate, boards in each township in the State. Said commission shall connect with them a competent Civil Engineer, etc., and the State Geologist shall be an *ex-officio* member of said commission. A report shall be made by such commission to the State Medical Society each year.

Resolved, That the President and Secretary of the Indiana State Medical Society shall appoint a committee of two physicians, members of the Society, and members of each subordinate society of the State, whose duty it shall be to present and advocate any medical law sanctioned and recommended by the State Society.

The chairman of said committee shall be at Indianapolis. Said committee shall take charge of and present all bills desired to be passed by the Legislature, including bill for the regulation of the practice of medicine, and any examining board of such committee shall be named by the President; the chairman being one of such examining board.

It was suggested that Dr. Hervey's paper on the subject be read now, in order that the discussion might take in the contents of his paper.

Dr. J. W. Hervey said:

The paper I desire to present to the Society is not ready just now, and I wish to present it to the publishing committee, if the Society think it proper to present such a paper. I wish to leave it discretionary with them to publish it or not.

Dr. Sexton moved that the paper be referred to the Committee on Publication.

Dr. R. E. Haughton, of Indianapolis, moved to lay the motion to refer upon the table, whereupon Dr. Hervey, by unanimous consent, withdrew the paper from the consideration of the Society.

The report of Dr. Stevens was referred to the Committee on Publication.

REPORT OF COMMITTEE ON CREDENTIALS.

Dr. F. J. Van Vorhis, of Indianapolis, chairman of the Committee on Credentials, submitted the following report, which was concurred in:

Your Committee on Credentials respectfully report that the protest against the admission of delegates of the Delaware County Medical Society involves a question of ethics, and recommend that the protest, together with all accompanying papers, be referred to the Committee on Ethics.

F. J. VAN VORHIS, *Chairman.*

H. D. WOOD, *Secretary.*

Dr. Marshall Sexton, of Rushville, moved that the annual address of the President be made the special order of business for eight o'clock this evening. Which motion prevailed.

Dr. George W. Mears, of Indianapolis, announced a paper on "Unavoidable Hemorrhage," which, upon motion, was made the special order of business for eleven o'clock to-morrow morning, in connection with the paper of Dr. Sutton on "Placenta Previa."

Dr. William Lomax, of Marion, moved that a committee of three be appointed to prepare and report a code of by-laws and order of business for the government of the Society and report at the present meeting.

Dr. F. J. Van Vorhis moved to amend the motion by striking out the words "to report at this meeting," and insert in their place the words "to report at the next annual meeting of the Society."

The question being on Dr. Van Vorhis' amendment, it did not prevail.

The question recurring upon the original motion of Dr. Lomax, Dr. Dodge moved to amend by inserting that the said committee be appointed by the chair.

The amendment was accepted by the mover and the motion prevailed, whereupon the chair appointed as the said committee Dr. William Lomax, Dr. Joseph R. Beck, and Dr. James F. Hibberd.

Dr. Joseph R. Beck, of Fort Wayne, moved that each county society be requested to elect one member to a committee to nominate officers of the Society for the ensuing year, and that they hand in the names of such committee to the Secretary at or before the noon adjournment, and that the committee be instructed to report at the afternoon session.

Dr. I. C. Walker moved to lay the motion of Dr. Beck upon the table. Which motion did not prevail.

The original motion was then carried.

Dr. J. F. Hibberd moved to adjourn to two o'clock.

Dr. J. S. Dodge moved to amend by naming half past one, which amendment prevailed and the Society adjourned.

FIRST DAY—AFTERNOON SESSION.

The Society met at 1:30 P. M., President Waterman in the chair.

Dr. James F. Hibberd read his paper on "Infantile Convulsions," after which,

Dr. Parvin moved the reference of the paper to the Committee on Publication.

Dr. Boyd moved to lay the motion to refer upon the table, and proceeded to discuss the motion, when the chair ruled the motion to lay upon the table was not debatable, and the motion was voted down.

Dr. Boyd then said:

I am sorry to see this paper referred without discussion. I would like at least to inquire of Dr. Hibberd if nothing is to be done for the little sufferer in infantile convulsions unless the convulsions extend for thirty minutes. It is to be presumed that for twenty-nine minutes and three-quarters we are to be perfectly still, and after the lapse of the other quarter of a minute we are to go to work and do something. Is that what the Doctor really means? The paper is probably valuable as far as it goes, but it might be made more valuable by indicating to the profession what should be done after the lapse of another half or quarter of a minute. The paper makes no suggestions as to what should be done. I would rather see a full and fair discussion of the paper.

The question being demanded, upon motion the paper was referred to the Committee on Publication.

The President announced as the special order for the hour the report of the Committee on By-Laws.

Dr. William Lomax, chairman, in behalf of the committee, asked for further time, which was granted; the committee not being fully ready to report.

Dr. Wilson Hobbs read a paper entitled "The Medical Witness," being his second paper upon that subject, which paper was referred to the Committee on Publication, with instructions to print.

Dr. James H. Woodburn moved to strike out the last clause of the resolution ordering the committee to print.

Dr. Van Vorhis moved to table Dr. Woodburn's amendment, and it was laid upon the table.

On motion, the three resolutions contained in the paper by Dr. Hobbs, were adopted.

(See Dr. Hobbs' paper on "The Medical Witness.")

The Secretary presented to the Society the following protest against the admission of delegates from the Wells County Medical Society, which, under the rules, was referred to the Committee on Credentials.

Dr. C. N. Blount moved that the thanks of the Society be tendered to Dr. Hobbs for his arduous labors in connection with the production of his paper entitled "The Medical Witness," and for the vast amount of information which he has collected on that subject for the benefit of the profession, and that the chair call for a standing vote.

The motion prevailed unanimously.

Dr. Joseph R. Beck presented the following communication, and moved the adoption of the resolutions embodied therein:

FORT WAYNE, IND., May 15, 1878.

To the Officers and Members of the Indiana State Medical Society:

GENTLEMEN: In my official capacities as Secretary of the Allen County Medical Society, and as acting Treasurer of the fund denominated the "Medical Defense Fund" by that Society, and referring to the obtaining of the decision of the Supreme Court of this State to the effect that medical expert witnesses must be paid for their testimony, I desire to submit to you a report and a resolution. My friend, Dr. Hobbs, has, I trust, so successfully placed the merits of the case before you as to make it unnecessary for me to add a word upon the subject in a general way.

But there yet remains for our consideration a branch of the subject which, unhappily, he has not even alluded to in his paper, and which, therefore, it becomes my painful duty to hold up to your mental gaze for your respectful contemplation. As

you will at once infer, it is that view of the question which is obtainable through the very common-place optical medium of dollars and cents. In a word, I am about to present you a report showing the receipts of cash subscriptions to the fund alluded to, the necessary disbursements of the same, and the indebtedness yet remaining.

This remaining indebtedness hangs over the Allen County Medical Society alone; and although its action in the premises was had with a great-hearted desire of doing only good to, and conserving only the best interests of, the medical profession in Indiana directly, and the whole profession of the country indirectly, yet it is the lamentable fact that our county society is alone responsible for the payment of the balance of the suit expenses incurred. This interesting epistle, divested of as much detail as practicable to a clear understanding of the subject, reads as follows:

The expenses incident to the appeal of the two cases to the Supreme Court were:

For attorneys' fees in the case of Dr. T. J. Dills	$150 00
For attorneys' fees in the case of Dr. A. P. Buchman	150 00
Transcript fees in the case of Dr. A. P. Buchman	3 00
Transcript fees in the case of Dr. T. J. Dills	3 00
Printing of circulars and envelopes	5 75
Printing of attorneys' briefs	73 95
Wrappers for mailing and total postage	25 57
Letter and cap paper and envelopes	8 85
Making the sum total of expenses	$420 12

To meet these expenses the committee has received the sums of money given below from the sources as stated:

Medical Department University of Buffalo, New York	$25 00
Benton County Medical Society	5 00
Carroll County Medical Society	5 00
Cass County Medical Society	5 00
Clark County Medical Society	5 00
Daviess County Medical Society	5 00
Dearborn County Medical Society	5 00
Decatur County Medical Society	5 00
Delaware County Medical Society	3 00
Dubois County Medical Society	5 00
Fountain County Medical Society	5 00
Gibson County Medical Society	5 00
Hancock County Medical Society	5 00
Henry County Medical Society	5 00
Jefferson County Medical Society	5 00
Lagrange County Medical Society	5 00
Laporte County Medical Society	5 00
Knox County Medical Society	5 00
Madison County Medical Society	6 50
Montgomery County Medical Society	5 00
Orange County Medical Society	5 00
Rush County Medical Society	5 00

St. Joseph County Medical Society	$5 00
Steuben County Medical Society	5 00
Tippecanoe County Medical Society	5 00
Tipton County Medical Society	3 00
Vigo County Medical Society	5 00
Wabash County Medical Society	5 00
Warrick County Medical Society	5 00
Wayne County Medical Society	8 00
Kokomo Academy of Medicine (Howard County)	5 00
Dr. A. G. Porter, Drake Med. Society (Boone County)	5 00
Dr. G. M. Darrach	1 00
Making cash receipts as above	$181 50

This statement shows that out of a total of nearly fifty County Medical Societies auxilliary to this State Society, only twenty-nine, or slightly more than half, have contributed to our fund. By a curious combination of circumstances, which I might guess at, but can not explain, a number of the largest and wealthiest Societies in the State have failed to contribute to what all now know to have been a common cause.

It will be perceived from the above figures that our expenses have been $420.12, which for two appealed cases is an exceedingly small amount, and our cash receipts $181.50, thus leaving our Society, unless aided, to bear the burden of confinement in jail of two of its members; of an immense amount of committee labor, extending over six months of time; of the jeers and sneers of the rabble, and unfortunately also of some of the medical profession, to their shame, be it said; and last, but by no means least, a financial delinquency of $243.62. This burden, gentlemen, I beg to remind you, was incurred for the benefit of him that is least amongst us, as well as for him who is greatest—that it is a burden attached to a measure which had for its purpose the relief of *every medical man* in this State—and that it is a burden which in the nature of things ought not to be so largely borne by the Allen County Medical Society.

In conclusion, then, lest I weary you by much matter, in view of this financial report as it stands; in view of the great pecuniary sacrifices made and to be made, and the immense amount of labor expended by the Allen County Medical Society in pushing this matter to a successful issue; in view of the great financial good which will from henceforth inure to the medical profession of this State by reason of the successful issue of this suit; in view of the comparatively limited contributions made to our Defense Fund by the medical profession in this State, and the inability of the Allen County Medical Society to pay the balance due, without aid from some source, and taking into account the fact that this balance is now long overdue and unpaid; therefore,

Resolved, That the Indiana State Medical Society hereby appropriates and sets apart the sum of two hundred dollars for a donation to the Medical Defense Fund of the Allen County Medical Society; said amount to be raised in such manner as the Finance Committee of said State Society may determine, and to be paid over to the

Committee on Medical Defense of the Allen County Medical Society, or the Treasurer of the same, at the earliest time the same can conveniently be done.

All of which is respectfully submitted,

JOSEPH R. BECK, M. D.

Dr. Dare here made a motion that each member should contribute one dollar to the relief of this indebtedness of the Allen County Medical Society, which motion was carried unanimously amid great enthusiasm.

The chair appointed a committee to pass hats among the members of the Society for the purpose of securing the collection proposed by Doctor Dare, and it was afterwards announced that the collection amounted to $91.25.

The Committee on Credentials submitted the following report in relation to the admission of delegates from the Wells County Medical Society:

MR. PRESIDENT: The Committee on Credentials respectfully report that, from the evidence before them, the organization of the Wells County Medical Society is not of such a character as to entitle it to representation in this body. We therefore recommend that the Secretary of this Society be instructed to return to said Society all money, papers, and credentials received from it.

F. J. VAN VORHIS, *Chairman.*

The report was concurred in.

The Secretary, Dr. Woolen, rose to ask for information as to his official duties in connection with the Wells County Medical Society and other societies reporting as organized in the interim.

Whereupon Dr. Wilson Hobbs moved that the Secretary, when any medical society shall have complied with the rules and regulations of this Society, and has been properly organized, shall be authorized to consider and treat the members of said county society as members of this Society, and so report through the printed instructions of the Society; provided, there be no protest presented against such recognition.

The motion was seconded by Dr. Beck, when Dr. Van Vorhis rose to a question of constitutional law, that the constitution of the Society regulates the matter embraced in the resolution of Dr. Hobbs, and it is not in order to change a constitutional provision by a mere resolution.

The chair decided to entertain the motion.

Dr. P. H. Jameson moved that the motion be referred to the Committee on Credentials, with instructions to report as early as possible. Which motion prevailed.

Dr. Wm. Lomax, from the Committee on By-Laws, reported the following Order of Business:

(See By-Laws.)

The Secretary announced a report from the Committee on Ethics, in the matter of the protest against the admission of delegates from the Delaware County Medical Society, as follows:

The Committee on Ethics, in the matter of the protest, by Dr. R. E. Haughton, against the admission of delegates from the Delaware County Medical Society, makes the following report:

It is charged that the following preamble and resolutions are a part of the record of the Transactions of the Delaware County Medical Society:

"WHEREAS, Consultations are generally called for in the interests of patients, and their welfare alone is to be considered; therefore

"*Resolved*, That as members of the Delaware County Medical Society we will meet in consultation, when necessary, educated medical men in good standing in any recognized medical school.

"*Resolved*, That all restrictions against consultations with certain practitioners are hereby repealed, and the whole matter is left to the discretion and good sense of the members.

"The same was adopted."

The evidence presented in the case convinces your committee that these resolutions, so directly in violation of the Code of Ethics of this Society, were introduced and passed by the "Muncie Academy of Medicine," a society that is no longer in existence. The present Delaware County Medical Society was organized since the last meeting of the State Medical Society, in accordance with all of the requirements of the said State Society. Your committee, therefore, find the charges not sustained, and recommend the admission of the delegates appearing from the said Delaware County Medical Society.

L. HUMPHREYS, *Chairman.*

J. R. WEIST, *Secretary.*

On motion, the report was concurred in.

Dr. Hobbs called attention to the deficiency existing in the amount of money called for in the resolution of Dr. Beck.

The chair decided that the resolution of Dr. Beck had been passed by without action, a voluntary collection having for the time superseded any action upon the resolution.

Whereupon Dr. Dodge moved to take up the resolution of Dr. Beck, which motion prevailed, and the question being upon the adoption of the

resolution, Dr. James H. Woodburn moved to refer the communication back to the county society from which it came, and that each county society shall pay its own debts.

Dr. Roberts moved that the sum of $150 be paid from the treasury of this Society to defray the indebtedness contracted by the Allen County Medical Society, alluded to in the memorial presented by Dr. Beck, for the Allen County Medical Society.

Dr. Hibberd moved to lay the motion on the table. Which motion prevailed.

Dr. F. J. Van Vorhis moved to refer the whole subject to the Finance Committee, with instructions to report its views of the matter as to the best plan to raise the money, and with instructions to report at the present meeting. Which motion prevailed.

Dr. Boyd moved that the Society instruct the Finance Committee to so shape its report as to avoid the making of a precedent by which the Indiana State Medical Society will be bound to pay any obligations contracted hereafter by any county medical society.

Dr. Van Vorhis moved to table Dr. Boyd's resolution, and it was so ordered.

Dr. Eastman, of Indianapolis, read a paper on "Fracture of the Clavicle," which, on motion, was referred to the Committee on Publication.

The Secretary announced that Dr. Eastman was prepared to exhibit the subject of the fracture described in the paper just read, provided that the Society desired such exhibition.

Whereupon, on motion, Dr. Eastman was invited to exhibit the subject to-morrow morning.

The chair announced the following Committee on Finance: Dr. J. H. Woodburn, Dr. George Sutton, Dr. W. A. Pugh, Dr. W. Hobbs, and Dr. C. N. Blount.

Dr. Corey read the paper heretofore announced, on "Wound in the Abdomen."

Dr. Wiest moved that Dr. Corey be requested to furnish the paper just read by him, to some medical journal for publication, as being better suited to that purpose than to place in the proceedings of a medical association. Which motion, after some discussion, prevailed.

Whereupon the Society adjourned to 8 o'clock P. M., the hour set for the presentation of the President's annual address.

Adjourned.

FIRST DAY—EVENING SESSION.

The Society met at 8 o'clock P. M., pursuant to adjournment.

President L. D. Waterman presented his annual address on the subject of "State Preventive Medicine."

Dr. Thad. M. Stevens said:

I think that in conformity with the drift of thought suggested in the address of the President, we should, at this meeting, lay some plan for definite action; I will, therefore, read some resolutions which I have prepared, which are as follows:

Resolved, That the Committee upon "State Board of Health," as now constituted by this Society, shall be called "The State Health Commission," with power to associate with them a competent Civil Engineer, etc., and that the State Geologist shall be an *ex officio* member of said commission. That the duties of such commission shall be to make investigations as to the causes and means of preventing disease in the State, and that they may at any time they see fit, petition the State Legislature to confer upon them *police powers*, so that they can enforce such measures as they may deem necessary to the objects above mentioned.

Resolved, That in case of vacancies occurring in such Board of Commissioners, they shall be filled by the State Society.

Dr. William Lomax moved to lay the motion on the table until 9 o'clock to-morrow morning.

Which motion prevailed.

Dr. Stevens then submitted the following resolution:

Resolved, That a committee of three be appointed by the President to draft a bill for the "regulation of the practice of medicine" in Indiana, and also to define the duties and privileges of pharmaceutists and druggists within the State, and that such bill shall be upon the basis of equal recognition of all schools and sects in medicine, so far as the examination of candidates for practice and their privileges are concerned, they to have separate boards.

Which, upon motion of Dr. Roberts, was laid upon the table until 9 o'clock to-morrow morning.

On motion, the Society adjourned until 9 o'clock to-morrow morning.

Second Day.

MORNING SESSION.

The Society met at 9 o'clock A. M., pursuant to adjournment.

Dr. Van Vorhis, from the Committee on Credentials, submitted the following report, which was concurred in:

INDIANAPOLIS, IND., May 22, 1878.

MR. PRESIDENT: The Committee on Credeatials, to whom were referred certain inquiries of the Secretary concerning the admission of delegates, are of the opinion that this is a proper subject for the consideration of the special committee on Rules and By-Laws, and would respectfully recommend that the matter be referred to them, with instructions to incorporate in their report a by-law defining the manner in which the application of county societies to become auxiliary to this society shall be made, and regulating the admission of delegates.

F. J. VAN VORHIS, *Chairman.*

H. D. WOOD, *Secretary.*

Dr. Theophilus Parvin moved as follows:

That the Committee on Publication be authorized to reprint six hundred copies of the address delivered by the President at this meeting, excepting that part relating especially to the State Board of Health, for distribution among the members of the next legislature, and to superintendents of county schools and educational institutions in the State.

The Doctor added:

I think, Mr. President, that this is the best thing for educating the people, in reference to the establishment of a State Board of Health, that has ever been written. I think the views presented in it should be brought to the attention of every member of the legislature and every superintendent of county schools, and that they should be found in every educational institution throughout the State.

Which motion prevailed.

Dr. Stevens called up the first resolutions laid upon the table until this hour, at last evening's session.

Dr. Van Vorhis moved the adoption of the resolution, and it was adopted.

Dr. Stevens then moved the adoption of the second resolution, which was made the special order for nine o'clock this morning.

Dr. Sexton moved to strike out that part of the said resolution which refers to "irregular practitioners."

Dr. Van Vorhis moved to lay the proposed amendment on the table, which motion did not prevail.

Dr. Hobbs opposed the amendment and advocated the passage of the resolution in its original form.

The question being on the amendment, it did not prevail.

Dr. J. F. Hibberd moved to amend by striking out the word "equal."

Dr. Stevens, with the consent of the Society, accepted the amendment, and the resolution, thus amended, was adopted.

The Secretary submitted the following report from the Committee on Finance, which was concurred in:

The report of Dr. I. C. Walker, Treasurer of the Society, was examined and approved.

The report of the Publishing Committee was examined and approved.

Your committee recommend the annual assessment of $1.00 on each member of the county societies.

J. H. WOODBURN, *Chairman.*

C. N. BLOUNT, *Secretary.*

Adopted.

Also, a report from the Committee on Nominations, which was concurred in.

Dr. J. McLean Moulder, Secretary of the Committee on Nomination, makes the following report:

For President—Dr. L. HUMPHREYS, St. Joseph county.

For Vice-President—Dr. BEN. NEWLAND, Lawrence county.

For Secretary—Dr. G. V. WOOLEN, Marion county.

For Assistant Secretary—Dr. G. W. BURTON, Lawrence county.

For Treasurer—Dr. I. C. WALKER, Marion county.

For Librarian—Dr. F. J. VAN VORIS, Marion county.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

NAME.	COUNTY.
Dr. S. M. Martin	Hancock.
Dr. William Lomax	Grant.
Dr. John Helm	Miami.
Dr. M. V. B. Newcomer	Tipton.
Dr. H. J. Rice	Parke.
Dr. Ben. Newland	Lawrence.
Dr. R. Q. Wilson	Howard.
Dr. G. W. Burton	Lawrence.
Dr. J. E. Markle	Randolph.
Dr. W. H. Bell	Cass.
Dr. John Dancer	Lagrange.
Dr. W. A. Hunt	Madison.
Dr. L. D. Waterman	Marion.
Dr. R. E. Haughton	Marion.
Dr. N. T. Cheneworth	Randolph.
Dr. M. Bata	Greene.
Dr. W. L. Barker	Warrick.
Dr. T. Parvin	Marion.
Dr. L. Humphreys	St. Joseph.
Dr. T. A. Graham	Clark.
Dr. H. T. Montgomery	Elkhart.
Dr. R. N. Todd	Marion.
Dr. I. C. Walker	Marion.
Dr. T. B. Harvey	Marion.
Dr. J. L. Dicken	Wabash.
Dr. J. R. Beck	Allen.
Dr. J. S. Gregg	Allen.
Dr. H. D. Wood	Steuben.
Dr. H. C. Cole	Howard.
Dr. H. Jameson	Marion.
Dr. T. F. Wood	Steuben.
Dr. G. F. Beasley	Tippecanoe.
Dr. J. Stewart	Madison.
Dr. W. C. Ranson	Blackford.
Dr. M. Sexton	Rush.
Dr. J. A. Eastman	Marion.
Dr. F. L. Putt	Elkhart.
Dr. A. Coleman	Cass.
Dr. W. B. Scales	Warrick.
Dr. J. S. Dodge	Elkhart.
Dr. R. J. Haggerty	Elkhart.
Dr. B. F. Spann	Madison.
Dr. A. M. Vickery	Tipton.
Dr. S. E. Munford	Gibson.
Dr. H. C. Davison	Blackford.
Dr. E. D. Laughlin	Orange.
Dr. S. H. Charlton	Jackson.
Dr. John Rea	Henry.
Dr. San. Faris	Henry.
Dr. J. H. Davision	Kosciusko.
Dr. J. Scudder	Daviess.
Dr. C. H. Wright	Jefferson.
Dr. Jon. Sloan	Floyd.
Dr. D. McClure	Clark.
Dr. C. B. Miller	Dearborn.
Dr. George Sutton	Dearborn.
Dr. J. R. Adams	Pike.
Dr. A. R. Byers	Pike.
Dr. T. Fravel	Laporte.
Dr. L. C. Rose	Laporte.
Dr. J. M. Kitchen	Marion.
Dr. T. M. Stevens	Marion.
Dr. W. L. May	Montgomery.
Dr. W. K. Mavity	Howard.

The committee also recommended that the delegates to the American Medical Association this year invite that honorable body to hold their next session at Indianapolis, Indiana.

The third Tuesday in May, 1879, was recommended as the time, and Indianapolis as the place, for holding the next session of the Indiana Medical Society.

J. R. BECK, *Chairman.*

J. MCLEAN MOULDER, *Secretary.*

Dr. Hibberd submitted the report from the Committee on By-Laws, which was concurred in. (See By-Laws.)

Dr. J. R. Weist moved the adoption of an additional by-law, relative to the publication of papers.

Dr. Van Vorhis moved to refer the propositions to the Special Committee on By-Laws and Rules. Which was concurred in.

The chair announced as the special order for the hour, the papers of Dr. George Sutton on "Placenta Previa," and Dr. George W. Mears on "Unavoidable Hemorrhage," which were read and referred to the Committee on Publication, after some discussion.

Dr. Woodburn, submitted the following recommendation from the Finance Committtee:

The Finance Committee recommend that in the matter of the Allen County "defense fund," societies under the jurisdiction of the State Medical Society be requested to raise a pro rata contribution sufficient to defray the balance due; in all cases due credit being given to such societies as have already paid, and that the next regular meeting of the auxiliary societies be the time set apart for the purpose named.

J. H. WOODBURN, *Chairman.*

C. N. BLOUNT, *Secretary.*

The Secretary announced the reception of an appeal from the Kosciusko Medical Society, alluding to the subject of medical ethics, which, at the suggestion of the President, and common consent, was referred to the Committee on Ethics.

The following invitations were received:

From the "School of Art," inviting the members to visit the school at their pleasure; and,

From the librarian of the Public Library, tendering the use of the library to the members of the Indiana State Medical Society.

The invitations were accepted with thanks.

On motion, the Society adjourned until 1.30 P. M.

Adjourned.

SECOND DAY—AFTERNOON SESSION.

Two o'clock P. M.

Dr. Blair submitted a report on a "Recent Epidemic of Small-Pox in Southern Indiana," which, on motion, was referred to the Committee on Publication.

Dr. Lomax, from the Committee on By-Laws, submitted the following special report, which was concurred in: (See sections 12 and 13.)

Dr. Thomas J. Dills read a paper on "Basedow's Disease," which, on motion of Dr. Cummings, was referred to the Committee on Publication.

Dr. J. R. Beck read a communication, in the way of a memorial, from the Allen County Medical Society, together with a resolution thereto attached, being in reference to the case of Dr. William H. Meyers.

Dr. Woodburn moved that the paper and resolution be referred to the Committee on Ethics. Which motion prevailed.

Dr. Cummings made a motion that as several other papers are here, presented for consideration of the Society and have not been read, to refer them to the Committee on Publication without reading. Which motion prevailed.

The chair announced the following special committee, to draft bill for presentation to the legislature, in accordance with the action heretofore taken by the Society, to-wit: Dr. James F. Hibberd, of Richmond; Dr. J. H. Helm, of Peru; and Dr. W. Hobbs, of Knightstown.

The following resolution was offered, which was laid upon the table:

Resolved, That it is the sense of this Society that those county medical societies which have not contributed to the expense of the recent suits at law in Allen county concerning the rights of physicians as expert witnesses, should do so at once, and in proportion to the number of members of such societies; but no society should contribute less than five dollars.

Dr. Dare read a paper on "Nasal Catarrh," which was referred to the Committee on Publication.

Dr. Humphreys, of South Bend, read a paper on "Conservative Surgery," which was referred to the Committee on Publication.

The chair announced the following Committee on Publication for the coming year: Dr. Allison Maxwell, chairman; Dr. John Chambers, Dr. L. L. Todd, Dr. I. C. Walker, and Dr. G. V. Woolen.

The following reports from the Committee on Ethics were then submitted:

The Committee on Ethics, to whom was referred the case of J. P. Bonsieur, M. D., make the following report:

In this case J. P. Bonsieur, M. D., who was expelled from this Society at the meeting in 1875 for violation of Article 1, section 3, of the Code of Ethics of the American Medical Association, makes an application for a reconsideration of the action of the society. The papers presented in the case have been carefully examined, and your committee report that the evidence before them does not warrant any recommendation in the case.

L. HUMPHREYS, *Chairman.*

J. R. WEIST, *Secretary.*

The Committee on Ethics, in the case of appeal of F. Moro from the action of the Kosciusko County Medical Society, also make the following report:

After a careful examination of the papers presented in the case, your committee report that they find no evidence to sustain the appeal, and therefore recommend that it be dismissed.

L. HUMPHREYS, *Chairman.*

J. R. WEIST, *Secretary.*

The Committee on Ethics, in the case of the memorial from the Allen County Medical Society in regard to the action of said society in the case of Wm. H. Myers, late member of said society, also make the following report:

Your committee report that they have examined said memorial and find that the action of said society was correct, and recommend that the memorial be referred to the Committee on Publication, as requested.

L. HUMPHREYS, *Chairman.*

J. R. WEIST, *Secretary.*

The report was concurred in by the Society.

[The last report in regard to the memorial from Allen county was considered by the officer of the Society and Publication Committee undesirable for publication and ordered suppressed.—G. V. WOOLEN, *Secretary.*]

Dr. Cummings offered a resolution as follows:

Resolved, That a committee of three be appointed to negotiate with railroad companies centering at Indianapolis for reduced rates coming to and returning from the meetings of the Society.

Dr. Van Vorhis raised the point that the committee of arrangements was already charged with the duties described in the resolution.

Whereupon Dr. Cummings moved that the resolution be referred to the committee on arrangements, which motion prevailed.

Dr. Stevens offered the following resolution:

Resolved, That the President appoint three physicians from each county in the State to use their influence with the Legislature in having any medical bill passed that has received the sanction of, or been recommended by, the State Society.

Dr. Beck moved to amend by adding that "physicians use their efforts to have proper men nominated for the Legislature."

The mover, with unanimous consent, accepted the amendment, and the amended resolution was adopted.

The following members were appointed, viz.:

NAME.	COUNTY.	POST OFFICE.
R. A. Curran	Adams	Decatur.
T. J. Dills	Allen	Fort Wayne.
A. J. Banker	Bartholomew	Columbus.
J. Kolb	Benton	Oxford.
H. C. Davisson	Blackford	Hartford.
M. H. Bonnell	Boone	Lebanon.
	Brown	
E. W. H. Beck	Carroll	Delphi.
W. H. Bell	Cass	Logansport.
N. Field	Clarke	Jeffersonville.
	Clay	
J. M. C. Adams	Clinton	Frankfort.
J. M. Craig	Crawford	Leavenworth.
G. G. Barton	Daviess	Washington.
J. D. Gatch	Dearborn	Lawrenceburg.
J. L. Wooden	Decatur	Greensburg.
J. A. Carven	DeKalb	Auburn.
John Horn	Delaware	Yorktown.
R. M. Welman	Dubois	Jasper.
	Dubois	
R. Q. Haggerty	Elkhart	Elkhart.
D. W. Butler	Fayette	Connersville.
John Sloan	Floyd	New Albany.
G. S. Jones	Fountain	Covington.
J. R. Goodwin	Franklin	Brookville.
A. H. Robbins	Fulton	Rochester.
S. E. Munford	Gibson	Princeton.
W. Lomax	Grant	Marion.

MEMBERS APPOINTED—CONTINUED.

NAME.	COUNTY.	POST OFFICE.
S. C. Cravens	Greene	Bloomfield.
W. B. Graham	Hamilton	Noblesville.
S. M. Martin	Hancock	Greenfield.
W. Reader	Harrison	Corydon.
W. J. Hoadley	Hendricks	Danville.
W. Hobbs	Henry	Knightstown.
W. K. Mavity	Howard	Kokomo.
W. B. Lyons	Huntington	Huntington.
J. A. Stilwell	Jackson	Brownstown.
R. Y. Martin	Jasper	Rensselaer.
C. S. Arthur	Jay	Portland.
W. A. Collins	Jefferson	Madison.
J. P. Mitchell	Jennings	Vernon.
B. Wallace	Johnson	Franklin.
F. W. Beard	Knox	Vincennes.
C. W. Burket	Kosciusko	Warsaw.
G. H. Dayton	Lagrange	Lima.
	Lake	
G. L. Andrew	Laporte	Laporte.
Ben. Newland	Lawrence	Bedford.
G. F. Chittenden	Madison	Anderson.
G. W. Mears	Marion	Indianapolis.
J. M. Kitchen	Marion	Indianapolis.
T. M. Stevens	Marion	Indianapolis.
S. W. Gould	Marshall	Argos.
	Martin	
J. H. Helm	Miami	Peru.
J. D. Maxwell	Monroe	Bloomington.
W. L. May	Montgomery	Crawfordsville.
G. B. Mitchell	Morgan	Mooresville.
J. F. Beckner	Newton	Kentland.
J. L. Gilbert	Noble	Kendallville.
	Ohio	
E. D. Laughlin	Orange	Orleans.
	Owen	
W. H. Gillum	Parke	Rockville.
	Perry	
A. Leslie	Pike	Petersburg.
J. F. McCarthy	Porter	Valparaiso.
E. Murphy	Posey	New Harmony.
H. E. Pattison	Pulaski	Winamac.
A. G. Preston	Putnam	Greencastle.
J. J. Evans	Randolph	Winchester.
I. Sunman	Ripley	Versailles.
M. Sexton	Rush	Rushville.
D. Dayton	St. Joseph	South Bend.
	Scott	
S. D. Day	Shelby	Shelbyville.
H. L. Ambrose	Spencer	Rockport.
M. C. Boner	Starke	Knox.
H. D. Wood	Steuben	Angola.

MEMBERS APPOINTED—CONTINUED.

NAME.	COUNTY.	POST OFFICE.
....	Sullivan.....	
L. J. Woollen.....	Switzerland	Vevay.
H. W. Wiley.....	Tippecanoe	Lafayette.
M. V. B. Newcomer	Tipton.....	Tipton.
....	Union	
W. A. Wheeler.....	Vanderburg.....	Evansville.
....	Vermillion	
S. J. Young.....	Vigo	Terre Haute.
J. L. Dicken.....	Wabash	Wabash.
A. M. Porter.....	Warren.....	State Line.
....	Warrick	
H. D. Henderson.....	Washington.....	Salem.
J. R. Weist.....	Wayne	Richmond.
....	Wells.....	
W. Spencer.....	White.....	Monticello.
A. R. Withers.....	Whitley.....	Columbia City.

Dr. Newland offered the following resolution, which was adopted by consent:

Resolved, That the thanks of this Society are hereby tendered Dr. John F. Johnston, chemist and pharmacist of this city, for the excellent display of pharmaceutical and chemical preparations exhibited for the inspection of the members attending this meeting.

Dr. Hobbs moved that Dr. G. V. Woolen, the Secretary, be paid one hundred dollars for his services the coming year, which motion prevailed.

Dr. Van Vorhis moved that the Secretary be authorized to add any name to the list of delegates to the American Medical Association that shall be properly reported to him, besides those already elected.

Dr. Ferguson moved a vote of thanks to the President for the able and impartial manner in which he had discharged the duties of his office and presided over this association. Also, to Dr. G. V. Woolen, the Secretary, for the able manner in which he had discharged the duties of his office, which motion prevailed unanimously.

Whereupon the Society adjourned to meet in Indianapolis on the third Tuesday in May, 1879.

CONSTITUTION AND BY-LAWS

OF THE

INDIANA STATE MEDICAL SOCIETY.

ARTICLE I.

TITLE.

The name and title of this Society shall be the Indiana State Medical Society.

ARTICLE II.

OBJECT.

The object of this Society shall be to provide an organization through which the regular physicians of the State may be united in one great professional fraternity for the purpose of giving frequent and emphatic expression to the views and aims of the medical profession; to supply more efficient means than have hitherto been available for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor, and interests of the medical profession; for exciting and encouraging emulation and concert of action among its members; for facilitating and fostering friendly intercourse between those engaged in it; for enlightening and directing public opinion in regard to the duties, responsibilities, and requirements of medical men; and for the promotion of all measures adapted to the relief of the suffering, and to improve the health and protect the lives of the community.

ARTICLE III.

MEMBERS.

SECTION 1. The members of this Society shall consist of delegates from the various county medical societies of this State, organized in accordance with the provisions of this constitution, who shall serve one year, or until others are elected to succeed them.

SEC. 2. All members in good standing in the auxiliary county societies shall be members of this Society in all its rights and privileges, except that none but delegate members shall transact the legislative business of the session.

ARTICLE IV.

COUNTY SOCIETIES.

SECTION 1. Any incorporated county medical society whose constitution embraces the objects of this constitution and the code of ethics of the American Medical Association shall, upon application, become auxiliary to the State Society, and shall be entitled to one delegate for every five members, and one for every additional fraction of more than half this number.

SEC. 2. The names of the members of such county societies, with their postoffice addresses, shall be certified by their respective secretaries, and forwarded to the Secretary of the State Society, who shall enroll them in a book kept for that purpose; and each member shall be entitled to a copy of all the publications of this Society upon the payment of its assessments.

ARTICLE V.

OFFICERS.

SECTION 1. The officers of this Society shall be a President, Vice-President, Secretary, Assistant Secretary, Treasurer, and Librarian.

SEC. 2. Each officer shall be elected by a vote of a majority of all the delegates present, and shall serve one year, or until another is elected to succeed him.

ARTICLE VI.

DUTIES OF OFFICERS.

SECTION 1. The President shall preside over the meetings, preserve order, call meetings when in his judgment the interest of the profession may require it, and perform such other duties as custom and parliamentary usage may require.

SEC. 2. The Vice-President shall assist the President in the performance of his duties, and, in his absence, preside over the meetings.

SEC. 3. The Secretary shall keep correct minutes of the proceedings of the Society, and, when approved, fairly transcribe them in a book kept for that purpose. He shall have charge of all books and papers belonging to the Society, excepting such as may properly belong to the Treasurer and Librarian, receive all moneys due the Society, and turn them over to the Treasurer, keeping an account of the same; perform all other duties which the usage of corporate or organized bodies may require, and serve as a member of the Committee on Publication.

SEC. 4. The Assistant Secretary shall assist the Secretary in the performance of the duties of his office.

SEC. 5. The Treasurer shall receive all moneys due the Society, and pay all bills approved by the Finance Committee and countersigned by the President, keeping a correct account, and making a full detailed report of the same to the annual meeting of the Society, and serve as a member of the Committee on Publication.

SEC. 6. The Librarian shall have charge of all the books, manuscripts (not specially belonging to the Secretary and Treasurer), instruments, specimens, preparations, and other scientific property belonging to the Society, keeping a complete catalogue of the same, and report the condition of his department to the annual meetings of the Society.

SEC. 7. The officers shall deliver all records, books, papers, funds and other property belonging to their several offices, to their successors, when they shall enter upon the discharge of their respective duties.

ARTICLE VII.

STANDING COMMITTEES.

At each annual meeting the President shall appoint the following standing committees, each to consist of five members, and to serve until their

successors are appointed and enter upon the discharge of their duties, viz: A Committee on Arrangements, a Committee on Credentials, a Committee on Finance, a Committee on Ethics, and a Committee on Publication.

ARTICLE VIII.

DUTIES OF STANDING COMMITTEES.

SECTION 1. The Committee on Arrangements shall, if no sufficient reasons prevent, be mainly composed of members at the place where the next annual meeting is to be held, and provide suitable rooms and accommodations for the meeting, and in all matters not otherwise provided for, superintend and protect the general interest of the Society.

SEC. 2. The Committee on Credentials shall examine and report upon the validity of the credentials of the delegates from the county societies.

SEC. 3. The Committee on Finance shall superintend the monetary affairs of the Society, inspect and audit all bills and the accounts of the Treasurer, and recommend the assessment of such *pro rata* tax upon its members as may be required to defray the current and incidental expenses of the Society.

SEC. 4. The Committee on Ethics shall examine and report, for the action of the Society while in attendance upon its meetings, all cases of appeals from county societies and complaints against members for non-professional conduct.

SEC. 5. The Committee on Publication, of which the Secretary and Treasurer shall be members, shall have charge of preparing for the press, and of publishing and distributing such of the proceedings, transactions and memoirs of the Society as may be ordered for publication. It shall supervise and edit all papers presented to the Society and ordered to be published, and report its doings to each annual meeting.

SEC. 6. The standing committees shall keep regular minutes of their proceedings, and furnish an authenticated copy thereof, to be deposited with the Librarian.

ARTICLES IX.

VACANCIES.

All vacancies in offices, occurring in the interim of the meetings, shall be filled by appointment of the President.

ARTICLE X.

QUORUM.

SECTION 1. Two-thirds of all the delegates shall constitute a quorum competent to alter or amend the constitution.

SEC. 2. One-half of the delegates reported to the Secretary at any meeting shall constitute a quorum to transact any business, except to alter or amend the constitution.

ARTICLE XI.

POWERS AND DUTIES.

SECTION 1. The Society shall have full power, and it shall be a part of its duties, to adopt such measures as may be deemed most efficient for mutual improvement, and for exciting a spirit of emulation among the members of the profession; for facilitating the dissemination of useful knowledge; for promoting friendly intercourse among its members; for the advancement of medical science, and for securing the objects set forth in Article II of the constitution.

SEC. 2. It shall have power to censure or expel any member convicted of violating its provisions, or who may be guilty of any act which may be considered derogatory to the honor of the medical profession; to hear and decide appeals coming from auxiliary societies, and enforce the observance of the code of ethics.

SEC. 3. It shall have power to raise money of its members by a tax which shall not exceed three dollars annually upon each member.

SEC. 4. The Society shall hold at least one meeting annually, and more if deemed necessary for the promotion of its interests.

SEC. 5. It shall adopt a seal as the insignia of its corporate authority.

SEC. 6. The time and place of each succeeding meeting shall be determined by a vote of the Society.

ARTICLE XII.

FUNDS.

The funds of the Society shall be applied exclusively to the promotion of its objects, as set forth in Article II of this constitution.

ARTICLE XIII.

CODE OF ETHICS.

This Society adopts, as a part of its regulations, the code of ethics of the American Medical Association.

ARTICLE XIV.

AMENDMENTS.

Every proposition for altering and amending the constitution shall be made in writing, and if such alteration or amendment receive the unanimous vote of all the delegates present, it shall be adopted; but if objection be made, it shall lay over until the next annual meeting, when, if it receive two-thirds of the quorum for amending the constitution, it shall be adopted.

ARTICLE XV.

SEAL.

The seal of the Indiana State Medical Society shall consist of a circular disc two inches exterior diameter, with an ornamental border or margin. Within this outer margin shall be in Roman letters: "Indiana State Medical Society. Organized MDCCCXLIX." Within this another circle with the motto in Latin, Roman letters: "Physiologica medicina cautionis et curæ morborum vera scientia est." The center is occupied by figures of Esculapius with staff and scroll, Hygeia casting away the serpent, surrounded on base and sides by a wreath of leaves; to the rear and right of the figure of Esculapius an owl is perched.

The following is an impression of said seal:

BY-LAWS.

ORDER OF BUSINESS.

SECTION 1.

1st. The President shall call the meeting to order.

2d. The Secretary shall call the roll of delegates.

3d. The chair shall appoint the Committee on Credentials, which shall report as soon as convenient.

4th. Report of Committee of Arrangements.

5th. Any business requiring early consideration may, by permission, be introduced.

6th. Reading such parts of the minutes of last meeting as may be necessary for the information of the Society, such parts of said minutes to be selected in advance by the Secretary.

7th. Report of the Secretary.

8th. Report of the Treasurer.

9th. Report of the Librarian.

10th. Report of Committee on Publication.

11th. President's Address, if for the exclusive hearing of the Society; otherwise, the fixing of the time for hearing said address.

12th. Chair to appoint Committee on Ethics, which shall report as soon as convenient.

13th. Chair to appoint Committee on Finance, to report as soon as convenient.

14th. Reading of papers that have been forwarded by county medical societies, and such as have been prepared by special appointments.

15th. Election of officers.

16th. Introduction of new business.

17th. Selection of time and place for next annual meeting,

18th. Chair to appoint Committee of Arrangements.

19th. Chair to appoint Committee of Publication.

20th. Miscellaneous business.

21st. Adjournment.

LAW OF ORDER.

SEC. 2. The deliberations of this Society shall be governed by parliamentary usage, as contained in Roberts' Rules of Order, unless otherwise determined by a vote of the Society.

REPORT OF PROCEEDINGS.

SEC. 3. The Secretary shall employ a short-hand reporter at an expense not exceeding ten dollars per day, to report to him the proceedings of the Society, and such report, when revised by him, he shall submit to the publishing committee for preparation for publication in the Transactions.

CONCERNING MEMBERS.

SEC. 4. The names of all members in good standing, and of all honorary members, shall be published annually in the Transactions.

SEC. 5. Every county society, at its regular meeting next preceding each annual meeting of this Society, shall make a full and correct catalogue of its members in good standing at that time, and transmit the same at once to the Secretary of this Society. If the name of a member is omitted from this catalogue that was contained in the last preceding catalogue, the county society must explain the omission by stating whether the member whose name is omitted is dead, has withdrawn, has been expelled, suspended, or whatever is the fact. And no one not a member in good standing in his county society can be a member of this Society.

APPEALS.

SEC. 6. Any member of a county society who has been expelled, or otherwise brought under discipline and condemned, shall have the right of appeal to this Society.

ASSESSMENTS.

SEC. 7. All assessments of money made by this Society shall be *per capita* on all the members of all the county societies, and each county society shall collect the assessment on its members and forward the same to the Secretary of this Society within the time named, and any county society that fails to comply with this requirement shall be held to be in contempt, and none of its members shall be allowed to participate in the business of this Society until such county society shall have purged itself of the contempt.

SEC. 8. The annual assessment on each member of the county societies for the use of this Society shall be one dollar, which shall be forwarded to the Secretary of this Society with the annual catalogue of members, as provided in section 5 hereof.

DELEGATES.

SEC. 9. The delegates to this Society shall be appointed by the county societies at the time the county societies are required to make their annual catalogue of members, and the names of the delegates shall be forwarded to the Secretary of this Society as soon as they are appointed.

SCIENTIFIC BUSINESS.

SEC. 10. The scientific communications to this Society shall consist of such papers as the county societies may order to be presented here, and the report of such special committees as may be appointed to write on selected subjects. The title of papers ordered up by county societies shall be forwarded to the Secretary of this Society at the time the annual catalogue of members is forwarded, together with a statement of the probable time it will take to read each paper.

SEC. 11. Volunteer papers may be admitted at any time by a vote of the Society after a statement of the character of the paper and the time it will require to read it.

AUXILIARY SOCIETIES.

SEC. 12. Any county society desiring to become auxiliary to this Society may file a certificate of its compliance with the conditions of Article IV of the constitution, and the Secretary of this Society shall be the judge of the sufficiency of such certificate until the next meeting of this Society.

PUBLICATION COMMITTEE.

SEC. 13. The Committee on Publication shall construe Section 5 of Article VIII, of the Constitution, to authorize them to alter, curtail, or reject any and all papers referred to them that do not belong to the business proceedings of the Society; and any paper referred to them which they deem meritorious, but not suitable for publication in the Transactions, they may, in their discretion, return to its author and authorize him to offer it to a medical journal for publication, with the announcement that it has been read before the Indiana State Medical Society.

LIST OF MEMBERS

OF THE

INDIANA STATE MEDICAL SOCIETY.

ALLEN COUNTY.

Officers.

William H. Brooks.....President.
Joseph R. Beck.....Secretary.
Thomas J. Dills.....Treasurer.

Censors.

James S. Gregg. Christian B. Stemen. William P. Whery.

Members.

Anderson, Samuel, Fort Wayne.
Ayres, Henry P., Fort Wayne.
Beck, Joseph R., Fort Wayne.
Brooks, William H., Fort Wayne.
Buchman, Alpheus P., Fort Wayne.
Dills, Thomas J., Fort Wayne.
Ferguson, William T., Fort Wayne.
Graves, Carleton, Zanesville.
Gregg, James S., Fort Wayne.
Josse, John M., Fort Wayne.
Mayer, Carl F., Fort Wayne.
McCullough, Thomas P., Fort Wayne.
Rosenthal, Isaac N., Fort Wayne.
Stemen, Christian B., Fort Wayne.
Sweringin, Hiram V, Fort Wayne.
Van Buskirk, Aaron E., Fort Wayne.
Whery, William P., Fort Wayne.
Wood, Hugh D., Angola.
Yuill, William R., Zanesville.

BENTON COUNTY.

Officers.

Jonathan Kolb.....President.
A. W. Wells.....Secretary.

Censors.

J. H. Tompson. J. S. Mavity. J. M. G. Beard.

Members.

Barnes, J. W., Oxford.
Beard, J. M. G., Ambia.
Carnahan, J. L., Fowler.
Gray, A. J., Otterbein.
Hillin, James, Montmorency.
Kolb, J., Oxford.
Mavity, J. S., Fowler.
Moore, A. V., Poolesville.
Purdy, A. J., Fowler.
Rodman, J. M., Fowler.
Scott, J. A., Ambia.
Tompson, J. H,, Otterbein.
Whitcomb, J. H., Boswell.
Wells, A. W. Oxford.

BLACKFORD COUNTY.

Officers.

W. W. Wilt.....President.
Peter Drayer.....Secretary.
William C. Ransom.....Treasurer.

Censors.

H. C. Davidson. William C. Ransom. C. Q. Shull.

Members.

Bennett, H. H., Montpelier.
Davisson, H. C., Hartford City.
Drayer, P., Hartford City.
Landon, L. C., Priam.
Mason, C. R., Hartford City.
Mason, Samuel, Pennville.
Ransom, William C., Hartford City.
Showalter, D. T., Montpelier.
Shull, C. Q., Montpelier.
Wilt., W. W., Montpelier.

BOONE COUNTY.

Officers.

E. S. Woodey.....President.
John F. Sims.....Vice-President.
A. G. Porter.....Secretary.
William H. Shulse.....Treasurer.

Members.

Bennington, A. M., Lebanon.
Bonnell, M. H., Lebanon.
Bonnell, Thomas A., Lebanon.
Boyd, James M., Thorntown.
Davis, D. B., Thorntown.
Duzan, George N., Zionsville.
Hamilton, James A., Dover.
Hardy, J. S., Whitestown.
Lane, Milton, Whitestown.
Lane, Thomas H., Lebanon.
Nickey, A., Elizaville.
Parker, James, Colfax.
Parr, W. P., Lebanon.
Porter, A. G., Lebanon.
Porter, John B., Lebanon.
Porter, W. D. Lebanon.
Rodman, Samuel W., Zionsville.
Rose, M. H., Thorntown.
Shulse, William H. Lebanon.
Sims, John F., Elizaville.
Smith, C. H., Lebanon.
Steelsmith, John M., Elizaville.
Tharp, Levi, Colfax.
Walker, D. R., Reese's Mills.
Williamson, R. A., Lebanon.
Woodey, E. S., Thorntown.

CARROLL COUNTY.

Officers.

E. W. H. Beck.....President.
L. Snyder.....Vice-President.
W. F. Sharrer.....Secretary.
W. Smith.....Treasurer.

Members.

Angell, Charles, Pittsburg.
Beck, E. W. H., Delphi.
Loop, W. M., Deer Creek.
Noland, S. T., Delphi.
Powell, J. W., Rockfield.
Richardson, J. T., Delphi.
Sharrer, W. F., Rockfield.
Smith, W., Delphi.
Snyder, L., Camden.
Sterrett, J. E. Burrows.

CASS COUNTY.

Officers.

W. H. Bell.....President.
J. M. Justice.....Vice-President.
J. Z. Powell.....Secretary.
R. Faber.....Treasurer.

Censors.

G. N. Fitch A. Coleman. J. Herman.

Members.

Adrain, J. A., Logansport
Bell, W. H., Logansport.
Coleman, A., Logansport.
Dale, F. C., United States Navy.
Faber, R , Logansport.
Fitch, G. N., Logansport.
Gemmill, H. C., Galveston.
Herman, J., Logansport.
Justice, J. M., Logansport.
Powell, J. Z., Logansport.
Stevens, B. C., Logansport.
Strode, A. B., Young America.
Cady, N. W., Logansport.

CLARK COUNTY.

Officers.

L. W. Beckwith.....President.
W. H. Sheets.....Vice-President.
R. E. Curran.....Secretary.
T. A. Graham.....Treasurer.

Censors.

N. Field. W. N. McCoy. F. A. Seymour.

Trustees.

W. E. Wisner. W. H. Sheets. W. D Fouts.

Members.

Beckwith, L. W., Jeffersonville.
Curran, R. E. Jeffersonville.
Field, N., Jeffersonville.
Fouts, W. D.
Graham, T. A., Jeffersonville.
Hay, A. J., Charleston.
McClure, C. B., Jeffersonville.
McClure, D., Jeffersonville.
McCoy, W. N., Jeffersonville.
Oldham, J. E., Charleston.
Seymour, F. A., Jeffersonville.
Sheets, W. H., Jeffersonville.
Taggart, S. C., Charleston.
Wisner, W. E , Henryville.

DAVIESS COUNTY.

Officers.

G. G. Barton.....President.
Henry Gers.....Sec'y and Treas.

Censors.

J. A. Scudder. William B. Anderson. J. L. Moore.

Members.

Anderson, W. B., Edwardsport.
Anderson, F. A., Washington.
Barton, G. G., Washington.
Carter, D. R., Epsom.
Clark, J. W., Glendale.
Gers, H., Washington.
Lemon, W. W., Washington.
McDaniel, C. W., Washington.
Moore, J. L., Washington.
Scudder, J. A., Washington.
Taylor, Harvey, Raglesville.
Willeford, George W., Glendale.

DEARBORN COUNTY.

Officers.

S. B. Robbins.....President.
J. P. Green.....Vice-President.
R. C. Bond.....Treasurer.
T. Curtis Smith.....Secretary.

Members.

Bond, E. P., Lawrenceburg.
Bond, R. C. Aurora.
Bowers, A. J., Moore's Hill.
Craig, T. E., Manchester.
Crisler, R. H., Bulletsville, Ky.
Daughters, A. P., Moore's Hill.
Davis, J. K., Morris.
Dilley, J. M. Cleves.
Freeman, William, Hartford.
Firmier, P., Weisburg.
Gatch, J. D., Lawrenceburg.
Grant, J. M., Burlington, Ky.
Green, J. P., Lawrenceburg.
Greer, L. H., Brookville.
Hackleman, P. O., Bright.
Haines, A. B., Aurora.
Harding, M. H., Lawrenceburg.
Harryman, A. B., Aurora.
Harryman, S. E., Lawrenceburg.
Henry, W. C., Aurora.
Hughes, J., Cleves.
Hughes, R. M., Cleves.
Hughes, W. C., Cleves.
Kyle, T. M., Manchester.
Lamb, J. Aurora.
Lamb, L. K., Aurora.
Mattison, J. A., Rabbit Hash, Ky.
Miller, C. B., Lawrenceburg.
Miller, R. H., Friendship.
Rectanus, F., Aurora.
Robbins, S. B., Lawrenceburg.
Sale, F. H., Dillsborough.
Sale, J. H.; Dillsborough.
Smith, T. C., Aurora.
Stevenson, G. A., Rising Sun.
Stewart, J. B., Wilmington.
Sutton, George, Aurora.
Sutton, W. E., Aurora.
Terrill, W. H. Petersburg, Ky.
Terrill, J. C., Hebron, Ky.
Vincent, H. C., Guilford.
Vincent, E. B., Sunman.
Walter, C. G., Lawrenceburg.
Williamson, H. T., Rising Sun.

DECATUR COUNTY.

Officers.

——— ———.....President.
——— ———.....Vice-President.
S. Vail Wright.....Secretary.
E. B. Severn.....Treasurer.

Members.

Alexander, John H., Clifty.
Bobbett, John H., Greensburg.
Bracken, William, Greensburg.
Cain, C., Clarksburg.
Carr, James L., Adams Station.
Covert, C. A., Greensburg.
Crawford, George S., Clifty.
Dowden, A. W., New Point.
Johnson, Thomas, Clarksburg.
Reeves, U. G., Clifty.
Ross, D. J. Hartsville.
Scobey, D. L. Greensburg.
Swem, E. B., Greensburg.
Webb, William H., Adams Station.
Wooden, John L., Greensburg.
Wright, S. Vail, Greensburg.

DELAWARE COUNTY.

Officers.

John Horn.....President.
S. V. Jump.....Vice-President.
G. D. Leech.....Secretary.
W. J. Boyden.....Treasurer.

Censors.

G. W. H. Kemper. Henry C. Winans. J. B. Summers.

Members.

Anderson, O. F., New Corner.
Armitage, D. R., Muncie.
Black, N. W., Selma.
Bowls, T. J., Muncie.
Boyden, W. J., Muncie.
Comstock, J. S. D., Daleville.
Davis, F. M., Wheeling.
Dillon, J., Daleville.
Horn, John, Yorktown.
Horn, W. N., Yorktown.
Jump, S. V., New Burlington.
Kemper, G. W. H., Muncie.
Leech, G. D., Muncie.
Skiff, C., Selma.
Summers, J. B., Muncie.
Winans, Henry C., Muncie.
Winton, R , Muncie.

DUBOIS COUNTY.

Officers.

Charles Knapp.....President.
W. M. DeMott.....Secretary.
A. E. Glezen.....Treasurer.

Censors.

C. W. Schwartz. W. R. McMahan. T. Wertz.

Members.

Cluthe, Will., Celestine.
DeMott, W. M., Hayesville.
Glezen, A. E., Ireland.
Harris, J., St. Anthony.
Hill, E. F., Portersville.
Johnson, T. J., Huntingburgh.
Kempf, J. E., Ferdinand.
Kelso, Z. C., Ireland.
Knapp, Charles, Ferdinand.
Maslowsky, Felix, Maria Hill.
McMahan, W. R., Huntingburgh.
Osborn, W. R., Jasper.
Parr, G. L., Ireland.
Rust, Fred., Holland.
Schwartz, C. W., Huntingburgh.
Stork, H. W., Holland.
Wellman, R. M., Jasper.
Wertz, T., Jasper.
Williams, G. P., Huntingburgh.

ELKHART COUNTY.

Officers.

H. T. Montgomery.....President.
F. L. Putt.....Vice-President.
G. G. Greiner.....Secretary.
R. Q. Haggerty.....Treasurer.

Members.

Dodge, J. Shaw. Bristol.
Greiner, G. G., Vistula.
Haggerty, R. J., Elkhart.
Haggarty, R. Q., Elkhart.
Julian, J. K., Locke.
Montgomery, H. T., Wakarusa.
Putt, Franklin L., Middlebury.

FLOYD COUNTY.

Officers.

John Sloan.....President.
W. A. Clapp.....Vice-President.
E. P. Easley.....Secretary.
E. W. King.....Treasurer.

Members.

Alexander, S. J., New Albany.
Bowman, Charles, New Albany.
Cannon, George H., New Albany.
Clapp, W. A., New Albany.
Davis, R. A., New Albany.
Easley, E. P., New Albany.
King, E. W. Galena.
Neat, A., New Albany.
Nutt, C. N., New Albany.
Sloan, John, New Albany.

FOUNTAIN COUNTY.

Officers.

Geo. S. Jones.....President.
T. F. Leech.....Secretary.
W. C. Cole.....Treasurer.

Censors.

J. W. Mock, Wesley Armstrong, George C. Hays.

Members.

Armstrong, W., Hillsboro.
Armstrong, L. P., Harveysburg.
Calvert, William, Stone Bluff.
Cole, W. C., Attica.
Fine, E. M., Steam Corner.
Hays, G. C., Hillsboro.
Johnson, C., Harveysburg.
Jones, G. S., Covington.
Jones, C. V., Covington.
Leech, T. F., Attica.
Lyon, L. D., Attica.
McNeil, S., Harveysburg.
Mock, J. W., Covington.
Petro, B. L., Covington.
Quinn, J. W., Hillsboro.
Richardson, A. G., Stone Bluff.
Riffle, J. F., Newtown.
Rupert, A. M., Attica.
Spining, J. N., Covington.
Watson, C. D., Covington.

GIBSON COUNTY.

Officers.

A. C. Woodruff.....President.
F. H. Maxam.....Secretary.
W. W. Blair.....Treasurer.

Members.

Blair, W. W., Princeton.
Gudgell, J. F., Hazleton.
Howard, E. J., Hazleton.
Kidd, W. G., Princeton.
Malone, J. A., Princeton.
Maxam, F. H., Princeton.
Moore, Robert, Summersville.
Munford, S. E., Princeton.
Patten, J. C.. Francisco.
Shoptaugh, S. H., Princeton.
West, V. T., Princeton.
Woodruff, A. C., Francisco.

GRANT COUNTY.

Officers.

John W. Perry.....President.
S. C. Weddington.....Secretary.
L. Williams.....Treasurer.

Censors.

C. Lomax. L. Corey. A. Henley.

Members.

Bates, A. J., Upland.
Barnes, W. C., Mier.
Charles, Henry., Carthage.
Clouser, N. D., Hartford.
Conner, J. C., Jalapa.
Corey, Lavanner, Van Buren.
Corey, L. J., Van Buren.
Daniels, G. W., Sweetser.
Egbert, George, Sweetser.
Flynn, William, Marion.
Goode, Jonas, Warren.
Hamilton, A. A., LaFountaine.
Henley, Alpheus, Fairmount.
Hess, Luther P., Marion.
Hall, John W., Sweetser.
Horne, Samuel S., Jonesboro.
Hupp, Samuel, Warren.
Jackson, L. M., Trenton.
Kimball, A. D., Xenia.
Kimball, T. C., Xenia.
Lacy, J. D., Monroe.
Littler, J. M., Albany.
Lomax, Constantine, Marion.
Lomax, William, Marion.
Lyons, W. B., Huntington.
McKinstry, J. F., Jonesboro.
Mauring, N. H., Independence.
Meek, John A., Jonesboro.
Mendenhall, O. A., Xenia.
Perry, John W., Alexandria.
Palmer, Daniel, Warren.
Pugh, Mahlon, Upland.
Reasoner, H. D., New Cumberland.
Riggs, C. E., Independence.
Scrambling, W. H., Slash.
Shively, James S., Marion.
Shively, M. T., Marion.
Smith, R. W., Xenia.
Weddington, S. C., Jonesboro.
Wilcutts, L. E., Marion.
Williams, Lewis, Marion.

GREENE COUNTY.

(Officers not reported.)

Members.

Cravins, S. C., Bloomfield.
Gray, J. W., Bloomfield.
Hanna, J. W., Linton.
Laughead, J., Scotland.
Brouillette, P. L., Worthington.
Lowder, H. R., Bloomfield.
Gastineau, H., Worthington.
Norvel, H. V., Bloomfield.
Beaty, M., Owensburg.

HAMILTON COUNTY.

Officers.

H. W. Clarke.....President.
W. H. Cyrus.....Vice-President.
M. C. Hayworth .....Secretary.
P. P. Whitesell.....Treasurer.

Censors.

F. M. Warford. J. M. Gray. J. I. Rooker.

Members.

Benson, J. L., Westfield.
Booth, A. D., Noblesvile.
Clarke, H. W., Noblesville.
Cyrus, W. H., New Britton.
Davenport, H. E., Sheridan.
Graham, W. B., Noblesville.
Gray, J. M., Noblesville.
Hayworth, M. C., Noblesville.
Heath, J. P., Fisher's Station.
McShane, J. T., Carmel,
Moore, H., Sheridan.
Parr, J. N., Jolliet.
Rooker, J. I., Noblesville.
Stout, W. H., Cicero.
Tucker, A. R., Cicero.
Warford, F. M., Cicero.
Whitesell, P. P., Clarksville.

HANCOCK COUNTY.

Officers.

S. T. Yancy.....President.
H. J. Bogart.....Vice-President.
E. J. Judkins.....Secretary.
G. C. Ewbank.....Treasurer.

Censors.

S. M. Martin. J. G. Stewart. W. E. Kerns.

Members.

Bogart, H. J., Charlottsville.
Carter, J. J., Eden.
Espy, Jas. O., Fountaintown.
Ewbank, G. C., Philadelphia.
Greenleaf, H. A., Philadelphia.
Hess, M. M., Cleveland.
Howard, N. P., Greenfield.
Jones, Jas. M., Fortville.
Judkins, E. I., Greenfield.
Keanis, W. E., Cleveland.
King, Warren R., Carrelton.
Loder, C. C., Warrington.
Martin, S. M., Greenfield.
Saunders, T. K., Fortville.
Stewart, J. G., Fortville.
Tague, George, Greenfield.
Troy, S. A., Milliner's Corner.
Yancy, S. T., Fortville.

HENDRICKS COUNTY.

Officers.

R. C. Talbott.....President.
T. J. Dryden.....Vice-President.
W. J. Hoadley.....Secretary.
L. H. Kenedy.....Treasurer.

Censors.

C. F. Fergison. J. A. Osborn. J. H. Brill.

Members.

Barker, J., Brownsburg.
Bartholomew, B., Danville.
Brill, J. H., Pittsborough.
Dryden, T. J., Clayton.
Fergison, F. C., Brownsburg.
Green, J. N., Stilesville.
Heavenridge, A., Stilesville.
Hoadley, W. J., Danville.
Kenedy, L. H., Danville.
Moore, R. C., Belleville.
Orear, J. H., Liston.
Osborn, J. A., New Winchester.
Parker, M. G., Amo.
Smith, F. W., Plainfield.
Summers, H. C., Amo.
Talbott, R. C., Pittsborough.

HENRY COUNTY.

Officers.

I. Mendenhall.....President.
John Rea.....Sec. and Treas.

Members.

Bailey, G. D., Spiceland.
Ballard, A. B., New Lisbon.
Benedict, H., Springport.
Boor, W. F., New Castle.
Boor, W. A., New Castle.
Burke, G. W., New Cestle.
Cothrane, James, Spiceland.
Ferris, S., New Castle.
Hess, L. W., Cadiz.
Hobbs, W., Knightstown.
Hunt, J. Spiceland.
Mendenhall, E. T., Millville.
Mendenhall, I., New Castle.
Minesinger, H. M., Sulphur Springs.
Rea, G. N., New Castle.
Rea, John, New Castle.
Reasoner, W. M., Sulphur Springs.
Zimmerman, G. W., Cadiz.

HOWARD COUNTY.

Officers.

E. A. Armstrong.....President.
J. V. Hoss.....Vice-President.
J. McLean Moulder.....Sec'y and Treas.

Members.

Armstrong, E. A., Kokomo.
Cole, H. C., Kokomo.
Dayhuff, A. F., Kokomo.
Hoss, J. V., Kokomo.
Johnson, J. C., Kokomo.
Kirk, C. W., Kokomo.
Martin, I. W., Ervin.
Mavity, W. K., Kokomo.
Miller, L. C., Kokomo.
Moulder, J. McLean, Kokomo.
Rayburn, I. W., Kokomo.
Scott, James, Greentown.
Scott, Wm., Kokomo.
Shirley, D. J., New London.
Wilson, R. Q., Kokomo.

JACKSON COUNTY.

Officers.

D. J. Cummings.....President.
Thomas S. Galbraith and Wm. C. A. Bain.....Vice-Presidents.
Joseph A. Stilwell.....Secretary.
Samuel H. Charlton.....Treasurer.

Censors.

Geo. O. Barnes. J. Q. Orvis. Geo. W. May.

Members.

Bain, W. C. A., Brownstown.
Barnes, Geo. O., Courtland.
Boas, M. L., Medora.
Charlton, Samuel H., Seymour.
Cummings, David J., Houston.
Davis, Joseph, Reddington.
Finch, E. T., Freetown.
Galbraith, Thomas S., Seymour.
Gerrish, J. W. F., Seymour.
May, George W., Mooney.
Milligan, Thomas F., Brownstown.
Orvis, George Q., Seymour.
Reed, E. P., Ewing.
Stage, Lewis I., Vallonia.
Stilwell, Joseph A., Brownstown.
Shields, John T., Seymour.
Warner, W. H., Crothersville.
Wells, James C., Mooney.
Wilson, Marshall V., Medora.

JEFFERSON COUNTY.

Officers.

William A. Collins.....President.
W. D. Hutchings.....1st Vice-President.
Joseph G. Rogers.....2d Vice-President.
J. H. Matthews.....Sec'y and Treas.

Members.

Brandt, William E., Hanover.
Collins, William A., Madison.
Cornett, W. T., Madison.
Ely, James R., Madison.
Hutchings, W. D., Madison.
Marquis, William, Wirt.
Matthews, J H., Madison.
Rogers, Joseph G., Madison.
Tevis, R. M., Brooksburg.
Wright, C. H., North Madison.

KNOX COUNTY.

Officers.

J. T. Freeland.....President.
F. W. Beard.....Secretary.
Alfred Patton.....Treasurer.

Members.

Barnett, W. O., Monroe City.
Bauer, M., Vincennes.
Beard, F. W., Vincennes.
Bever, J. C., Vincennes.
Davis, Royce, Decker's Station.
Fairhurst, O., Vincennes.
Freeland, J. T., Freelandsville.
Harris, W. B., Vincennes.
Harrison, S. L., Vincennes.
Haughton, A. J., Oaktown.
Jessup, R. B., Vincennes.
Keith, B. F., Edwardsport.
Mantle, J. R., Vincennes.
Martin, W. T., Monroe City.
Merritt, J. N., Oaktown.
Patton, A., Vincennes.
Pugh, J. W., Oaktown.
Reel, E., Bicknell.
Smith, H. M., Vincennes.
Wise, W. H., Oaktown.
Witherspoon, M., Bruceville.

KOSCIUSKO COUNTY.

Officers.

W. P. Seymour.....President.
C. W. Burket.....Vice-President.
J. B. Webber.....Secretary.
S. C. Gray.....Treasurer.
J. H. Davisson.....Cor. Secretary.

Censors.

T. Davenport. C. T. Peck. J. H. Davisson.

Members.

Bash, J. M., Warsaw.
Becknell, J. R., Milford.
Bolan, M. J., Milford.
Burket, C. W., Warsaw.
Davenport, Thomas, Milford.
Davisson, J. H., Warsaw.
Gray, S. C., Warsaw.
Matson, G. W., Sevastapol.
Pearman, F. M., Palestine.
Peck, C. T., Leesburg.
Seymour, W. P., Warsaw.
Ward, U. J., Silver Lake.
Webber, I. B., Warsaw.
White, Frank H., Warsaw.

LAGRANGE COUNTY.

Officers.

George H. Dayton.....President.
John Dancer and W. H. Short.....Vice-Presidents.
E. G. White.....Treasurer.
J. L. Short.....Secretary.

Censors.

John Dancer. W. H. Short. E. G. White.

Members.

Dancer, John, South Milford.
Dayton, George H., Lima.
Hughes, William, Lima.
Jones, A. W., Lagrange.
Newman, J. P., Lagrange.
Rowles, J. W., Mongo.
Short, J. L., Lagrange.
Short, W. H., Lagrange.
Spaulding, A. M., Applemanburg.
Whetsel, C. M,, Mongo.
White, E. G., Lagrange.

LAPORTE COUNTY.

Officers.

A. G. Stevenson.....President.
N. S. Darling.....Secretary.
G. L. Andrew.....Treasurer.

Censors.

L. C. Rose. G. L. Andrew. H. F. C. Miller.

Members.

Andrew, George L., Laporte.
Darling, Nelson S., Laporte.
Fravel, Theophilus, Westville.
Keen, L. S. Laporte.
Miller, H. F. C., Otis.
Meyer, I. H. W., Laportc.
Rogers, Ephraim A., Laporte.
Rose, Landon C., Laporte.
Standiford, A. G., Westville.
Stevenson, A. G., Laporte.

LAWRENCE COUNTY.

Officers.

G. W. Burton .....President.
Benjamin Newland. .....Vice-President.
J. Gardner.....Secretary.
S. A. Rariden .....Treasurer.

Censors.

J. O. Stillson. A. F. Berry. E. P. Gibson.

Members.

Allen, E., Fayetteville.
Berry, A. F., Rivervale.
Burton, G. W., Mitchell.
Burton, John, Georgia.
Crim, L. A., Tunnelton.
Dixon, H. C., Tunnelton.
Gardner, J., Bedford.
Gibson, E. P., Bono.
Judah, W. P., Guthrie.
Kimberlin, L. A., Mitchell.
La Force, H. C., Heltonsville.
Larkin, J. B., Mitchell.
Newland, Ben., Bedford.
Pearson, J. C., Mitchell.
Phipps, J. M., Heltonsville.
Rariden, S. A., Bedford.
Smith, W. H., Leesville.
Stillson, J. O., Bedford.
Yandell, W., Huron.
Yost, J. L. W., Mitchell.

MADISON COUNTY.

Officers.

George F. Chittenden.....President.
J. Stewart.....Vice-President.
Horace E. Jones.....Secretary.
B. F. Spann.....Treasurer.

Censors.

W. A. Hunt. William Suman. N. S. Wickershan.

Members.

Broadbent, Oliver, Kilbuck Valley.
Brownbeck, O. W., Pendleton.
Brunt, S. F., Summitville.
Burr, C. S., Anderson.
Chittenden, George F.
Cook, I. W. Pendleton
Cook, Ward, Pendleton.
Dunham, U., Anderson.
Free, C., Prosperity.
Fussell, Samuel, Markleville.
Hunt, W. A., Anderson.
Jones, Horace E., Anderson.
Justice, William A., Markleville.
Lewis, Walter H., Huntsville.
Loder, C. C., Fishersburg.
McMahan, W. V., Alexandria.
Morgan, Wm. J., Harrison.
Perry, John W., Alexandria.
Spann, B. F., Anderson.
Stewart, J., Anderson.
Sullivan, John T., Alexandria.
Suman, William, Anderson.
Wickersham, N. L., Anderson.

MARION COUNTY.

Officers.

John M. Kitchen.....President.
Green V. Woolen.....Vice-President.
Oliver H. Sullivan.....Secretary.
William H. Wishard.....Treasurer.

Judicial Council.

Frisby S. Newcomer. Luther L. Todd. Thomas N. Bryan.
Luther D. Waterman. James H. Woodburn. John Chambers.

Members.

Atkins, Benjamin F., Indianapolis.
Barnes, C. A., Indianapolis.
Bigelow, James K., Indianapolis.
Boynton, C. S., Indianapolis.
Bryan, Thomas N., Indianapolis.
Bullard, William R., Indianapolis.
Carter, William J., Mt. Jackson.
Chambers, John, Indianapolis.
Cochrane, W. A., North Indianapolis.
Comingor, John A., Indianapolis.
Davis, William H., Indianapolis.
Eastman, Joseph A., Indianapolis.
Elder, Elijah S., Indianapolis.
Elstun, William J., Indianapolis.
Featherston, John R., Indianapolis.
Fletcher, William B., Indianapolis.
Graydon, Robert G., Southport.
Harvey, Thomas B., Indianapolis.
Haughton, Richard E., Indianapolis.
Henthorn, Leroy, Indianapolis.
Hervey, James W., Indianapolis.
Jameson, Patrick H., Indianapolis.
Jameson, Henry, Indianapolis.
Jeffries, William E., Indianapolis.
Kitchen, John M., Indianapolis.
Lawrence, Amos O., Indianapolis.
Mapes, Smith H., Lawrence.
Marsee, Joseph W., Indianapolis.

MARION COUNTY—Continued.

Maxwell, Allison, Indianapolis.
McDonald, William B., Augusta.
Mears, George W., Indianapolis.
Newcomer, Frisby S., Indianapolis.
Oliver, Dandridge H., Indianapolis.
Parvin, Theophilus, Indianapolis.
Patterson, Amos W. Indianapolis.
Pettijohn, John E., Mt. Jackson.
Renner, John E., Indianapolis.
Ritter, Caleb A., Indianapolis.
Stewart, James W., Indianapolis.
Stevens, Thaddeus M., Indianapolis.
Sullivan, Oliver H., Indianapolis.
Sutcliffe, John A., Indianapolis.
Thompson, James L., Indianapolis.
Tilford, John H., Irvington.
Todd, Luther L., Indianapolis.
Todd, Robert N., Indianapolis.
Van Vorhis, Flavius J., Indianapolis.
Wagner, Theodore A., Indianapolis.
Walker, Isaac C., Indianapolis.
Wallace, George B., Indianapolis.
Waterman, Luther D., Indianapolis.
Wishard, William H., Indianapolis.
Woodburn, James H., Indianapolis.
Woolen, Green V., Indianapolis.

MARSHALL COUNTY.

Officers.

James S. Leland.....President.
J. H. Wilson.....Sec'y and Treas,

Censors.

R. B. Eaton. Finley Stevens. J. T. Doke.

Members.

Doke, J. T., Walnut.
Eaton, R. B., Argos.
Gould, S. W., Argos.
Leland, J. S., Argos.
Loring, C. J., Walnut.
Reynolds, G. R., Plymouth.
Stevens, Finley, Argos.
Stevens, O. P., Maxinkuckee.
Wilson, J. H., Plymouth.

MIAMI COUNTY.

Officers.

W. H. Brenton.....President.
J. O. Ward.....Secretary.
C. B. Higgins.....Treasurer.

Members.

Brenton, W. H., Peru.
Bloomgeld, E. M., Peru.
Graham, B. R., Chili.
Helm, J. H., Peru.
Higgins, C. B., Peru.
Irvin, O. C., Bunker Hill.
Marsh, S. S., Reserve.
McKee, James, Twelve Mile.
Meek, J. A., Bunker Hill.
Robbins, A. H., Rochester.
Ward, J. O., Peru.
Wilson, W. T., Bunker Hill.
Williams. L. P., Deedsville.

MONTGOMERY COUNTY.

Officers.

W. L. May.....President.
W. L. Johnson.....Vice-President.
E. H. Cowan.....Secretary.
S. W. Purviance.....Treasurer.

Members.

Cowen, E. H., Crawfordsville.
Donaldson, J. W., Ladoga.
Ensminger, S. L., Crawfordsville.
Fitch, A. P., Waynetown.
Hogsett, J. W., Mace.
Hutchings, B. F., New Market.
Jones, O. H., Mace.
Johnson, W. L., Crawfordsville.
May, W. L., Crawfordsville.
Purviance, S. W., Crawfordsville.
Ristine, W. H., Crawfordsville.

MORGAN COUNTY.

(Officers not reported.)

Members.

Douglass, F. M., Martinsville.
Farr, W. N., Paragon.
Green, E. V., Martinsville.
Griffith, R. S., Morgantown.
Knight, J. H., Paragon.
Lindley, C. M., Brooklyn.
McNab, P., Mooresville.
Mitchell, G. B., Mooresville.
Perce, R. H., Mooresville.
Reagan, A. W., Mooresville.
Reagan, J., Monrovia.
Ritchey, E. P., Martinsville.
Robertson, W. S., Morgantown.
Robinson, H. C., Martinsville.
Rundell, S. H., Coap.

ORANGE COUNTY.

Officers.

H. Lingle.....President.
T. P. Carter.....Vice-President.
U. H. Hon.....Secretary.
B. J. Hon.....Treasurer.

Censors.

E. D. Laughlin. J. A. Ritter.

Members.

Carter, T. P., Orangeville.
Cole, J. A., Newton Stewart.
Dillard, J., Newton Stewart.
Hon, B. J., Orleans.
Hon, U. H., Paoli.
Laughlin, C. E., Orleans.
Laughlin, E. D., Orleans.
Lindley, L., Paoli.
Lingle, H., Orleans.
Lingle, R. W., Orleans.
Ritter, J. A., Orangeville.
Walters, R. D., Lancaster.

PARKE COUNTY.

Officers.

B. F. Hudson.....President.
W. H. Gillum.....Secretary.
A. D. Tomlinson.....Treasurer.

Members.

Dare, J. S., Bloomingdale.
Gillum, W. H., Rockville.
Gillum, Ira H., Sylvania.
Goldsberry, J. A., Annapolis.
Hudson, B. F., Montezuma.
McKey, R. H. W., Russell's Mills.
Morris, C. C., Rockville.
Rice, H. J., Rockville.
Tomlinson, A. D., Bloomingdale.

PIKE COUNTY.

Officers.

Alexander Leslie, Sr.....President.
John D. Simpson.....Secretary.
A. R. Byers.....Treasurer.

Censors.

I. R. Adams. R. H. Phillips. D. H. Daniel.

Members.

Adams, I. R., Petersburg.
Agee, C. I., Stendale.
Bartimus, S. T., Union.
Byers, A. R., Petersburg.
Daniel, D. H., Otwell.
Hedden, William C., Otwell.
Hobbs, A. G., Arthon.
Leslie, A., Sr., Petersburg.
Montgomery, G. B., Winslow.
Phillips, R. H., Union.
Schmuck, H. T., Oatsville.
Simpson, John D., Petersburg.
Smith, J. T., Petersburg.
Woodward, L. E., Union.

POSEY COUNTY.

Officers.

Edward Murphy.....President.
A. W. Spain.....Vice-President.
S. H. Pease.....Secretary.
E. V. Spencer.....Treasurer.

Members.

Bitz, L. B., Blairsville.
Blunt, M. S., Mt. Vernon.
Culmer, George F., New Harmony.
Elliott, Cyrenius, Wadesville.
Hicks, C., Caborn Station.
Highman, L. W., New Harmony.
Holton, William M., New Harmony.
Minnick, John M.. Solitude.
Montgomery, D. B., Cynthiana.
Moore, Richard S., Mt. Vernon.
Murphy, Edward, New Harmony.
Neal, Daniel, New Harmony.
Pearse, S. H., Mt. Vernon.
Rawlings, S. O., New Harmony.
Rutledge, J. C., Poseyville.
Spain, A, W., Poseyville.
Schultz, O. T., Mt. Vernon.
Spencer, E. V., Mt. Vernon.
Weever, John B., Mt. Vernon.
Welburn, G. W., Stewartsville.
Williams, Floyd, Farmersville.
Williams, J. B., Mt. Vernon.

PULASKI COUNTY.

Officers.

H. E. Pattison.....President.
F. B. Thomas.....Secretary.

Members.

Cleland, W. T., Kewana.
Fouts, D. N., Royal Center.
Kittinger, Henry, Winamac.
Loring, J. D., Francisville
Pattison, H. E., Winamac.
Thomas, F. B., Winamac.
Thompson, S. W., Winamac.
Thompson, W. H., Winamac.

PUTNAM COUNTY.

Officers.

A. G. Preston.....President.
H. E. Ellis.....Vice-President.
L. M. Hanna.....Secretary.
Samuel Fisher.....Treasurer.

Censors.

S. A. Hinton. G. C. Smythe. E. A. Matson.

Executive Committee.

E. B. Evans. J. M. Norwood. J. L. Preston.

Members.

Allen, H. P., Pleasant Garden.
Cross, J. B., Bainbridge.
Dunnington, A., Cloverdale.
Dunnington, R. C., New Maysville.
Ellis, H. E., Greencastle.
Evans, E. B., Greencastle.
Farrow, A. C., Greencastle.
Fisher, B F., Belle Union.
Fisher, Samuel, Green Castle.
Hall, J. T., Morton.
Hanna, L. M., Greencastle.
Hinton, S. A., Reelsville.
Matson, E. A., Greencastle.
McNary, C. B., Fillmore.
Norwood, J. M., Greencastle.
Preston, A. G., Greencastle.
Preston, J. L., Greencastle.
Smythe, G. C., Greencastle.
Stanley, F., Fincastle.
Zane, T. M., Manhartan.

RANDOLPH COUNTY.

Officers.

D. Ferguson.....President.
L. N. Davis.....Vice-President.
J. J. Evans.....Secretary.
J. T. Cheneworth.....Treasurer.

Members.

Bennett, J. E., Hillgrove, Ohio.
Commons, William, Union City.
Cheneworth, J. T., Winchester.
Cheneworth, N. T., Windsor.
Davis, L. N., Farmland.
Davis, R. P., Red Key.
Evans, J. J., Winchester.
Farquhar, A. H., Ridgeville.
Ferguson, D., Union City.
Good, A. H., Bloomingsport.
Harrison, R. N., Winchester.
Heiner, John, Arba.
Markle, J. E., Winchester.
Shepherd, G. W., Red Key.
Smith, W. G., Winchester.

RUSH COUNTY.

Officers.

John H. Spurrier.....President.
W. W. Arnold.....Vice-President.
William H. Smith.....Secretary.
John Moffitt.....Treasurer.

Members.

Arnold, John, Rushville.
Arnold, W. W., Rushville.
Axline, J. A., Raleigh.
Caldwell, Annie, Rushville.
Derbyshire, Ephraim, New Salem.
Ely, James M., Palestine.
Graham, A. E., Richland.
Green, J. W., Arlington.
Hargrove, W. S., New Salem.
Inlow, J. J., Manilla.
McGaughey, John E., Arlington.
Moffitt, John, Rushville.
Pollitt, Francis M., Milroy.
Pugh, William A., Rushville.
Sexton, Marshall, Rushville.
Sipe, R. W., Orange.
Smith, I. F., Rushville.
Smith, William H., Rushville.
Spellman, F. J., Andersonville
Spurrier, John H., Rushville.
Thomas, Samuel C., Milroy.

STARKE COUNTY.

Officers.

M. C. Boner.....President.
A. H. Henderson.....Vice-President.
J. B. Haag.....Secretary.
J. B. Parker.....Treasurer.

Censors.

O. A. Rae. L. D. Glazebrook.

Members.

Boner, M. C., Knox.
Garner, H., Knox.
Glazebrook, Lorenzo D., San Pierre.
Henderson, Alex. H., Knox.
Haag, J. B., Knox.
Parker, J. B., Knox.
Rae, O. A., Knox.
Wier, W. H., Knox.

STEUBEN COUNTY.

Officers.

James McLean.....President.
S. H. Fuller.....Vice-President.
S. A. Wood.....Secretary.
L. Abbott.....Treasurer.

Censors.

M. F. Crain. D. W. Fenton. D. B. Griffin.

Members.

Abbott, L., Fremont.
Bachman, N. E., Hamilton.
Bates, Charles, Nettle Lake, O.
Blue, J. B., Flint.
Clarke, H. A., Fort Wayne.
Crain, M. F., Angola.
Dart, S. F,, Flint.
Fenton, D. W., Angola.
Fuller, S. H., Pleasant Lake.
Goodale, C., Orland.
Griffin, D. B., Angola.
McLean, J., Crooked Creek.
Van Antwerp, C., Orland.
Williamson, ——, Orland.
Wood, H. D., Angola.
Wood, S. A., Angola.
Wood, T. F., Metz.
Woodworth, B. S., Fort Wayne.
Yengling, A. C., Angola.

ST. JOSEPH COUNTY.

Officers.

Daniel Dayton.....President.
J. R. Brown and W. W. Butterworth.....Vice-Presidents.
John Cassidy.....Secretary.
B. R. O'Connor.....Treasurer.

Members.

Barbour, O. P., South Bend.
Brown, J. R., Sumption's Prairie.
Butterworth, W. W., Mishawaka.
Cassidy, John, South Bend.
Dayton, Daniel, South Bend.
Humphreys, L., South Bend.
Kettring, J. A., South Bend.
Laning, S., North Liberty.
O'Connor, B. R., Mishawaka.
Sack, J. C., South Bend.
Vavier, J. R., North Liberty.
Voorhees, G. V., South Bend.

TIPPECANOE COUNTY.

Officers.

Harvey W. Wiley.....President.
Charles M. Randall.....Secretary.
Silas T. Yount.....Treasurer.

Censors.

W. W. Vinnedge. William F. Cady. George T. Beasley.

Members.

Beasley, G. F., Lafayette.
Cady, W. F., Lafayette.
Hanna, William, Lafayette.
Randall, C. M., Lafayette.
Shill, A. A., Battle Ground.
Spaulding, J., Chauncey.
Vinnedge, W. W., Lafayette.
Walker, W. S., Lafayette.
Webster, J. C., Romney.
Wells, A. A., Stockwell.
Wiley, H. W., Lafayette.
Yount, S. T., Lafayette.

TIPTON COUNTY.

Officers.

W. N. Heath.....President.
N. W. Doan.....Vice-President.
William M. Glass.....Secretary.
A. M. Vickrey.....Treasurer.

Censors.

A. B. Pitzer. Horace Evans.

Members.

Austin, W., Windfall.
Barker, A. J., Tipton.
Collins, G. M., Tipton.
Doan, N. W., New Lancaster.
Driver, J. C., Shielville.
Evans, H. G., Tipton.
Glass, W. M., Shielville.
Gosset, J. M., Normundy.
Heath, W. N., Sharpesville.
Jessup, J. T., Curtisville.
Newcomer, M. V. B., Tipton.
Pitzer, A. B., Sharpesville.
Rubush, D. P., Teetersburg.
Spitzmesser, J. L., Windfall.
Vickrey, A. M., Tipton.
Welchell, Thomas W., Tetersburg.

VANDERBURG COUNTY.

Officers.

M. J. Bray.....President.
C. P. Bacon.....Vice-President.
——— .....Sec'y and Treas.

Members.

Bacon, C. P., Evansville.
Bray, M. J., Evansville.
Compton, J. W., Evansville.
Irwin, J. W., Evansville.
Lining, C. E., Evansville.
Wheeler, W. N., Evansville.

VIGO COUNTY.

Officers.

B. F. Swafford.....President.
J. P. Worrell.....Vice-President.
S. C. Preston.....Secretary.
W. Q. Insley.....Treasurer.

Censors.

J. D. Mitchell. W. M. Stevenson. L. J. Willien.

Members.

Armstrong, William P., Terre Haute.
Carson, Louis E., Prarieton.
Crapo, John R., Terre Haute.
Gerstmeyer, Charles, Terre Haute.
Hickson, G. W., Riley.
Humphreys, W. M., Terre Haute.
Insley, W. Q., Terre Haute.
Kuster, C. E., Terre Haute.

VIGO COUNTY—Continued.

Long, J. H., Terre Haute.
Mann, H. D., Terre Haute.
McLain, Leslie, Terre Haute.
Mitchell, J. D., Terre Haute.
Moorhead, T. W., Terre Haute.
Pinson, A. J., Libertyville.
Poindexter, John, Bloomtown.
Preston, S. C , Terre Haute.
Purcell, W. M , Terre Haute.
Roberts, W. H., Terre Haute.
Stevenson, W. M., Terre Haute.
Swafford, B. F., Terre Haute.
Thompson, J. C., Terre Haute.
Thralls, R. T., St. Marys.
Watkins, Samuel, Otter Creek.
Willien, L. J., Terre Haute.
Worrell, J. P., Terre Haute.
Young, S. J., Terre Haute.

WABASH COUNTY.

Officers.

J. H. Ford.....President.
J. L. Dicken.....Secretary.
A. J. Smith.....Treasurer.

Censors.

C. Waddell. H. Adar. F. S. C. Grayston.

Trustees.

A. McD. Thomas. R. F. Blount. E. F. Donaldson.

Members.

Adar, H., Somerset.
Armstrong, W. G., LaFontain.
Bloomer, F. H., Pleasant Grove.
Blount, R. F., Wabash.
Chinneworth, G. P., Mt. Etna.
Dicken, J. L., Wabash.
Donaldson, E. F., Wabash.
Ford, J., Wabash.
Ford, J. H., Wabash.
Grayston, F. S. C., Huntington.
Hale, M. M., Lagro.
Jones, J. H., Roann.
Kautz, J., Dora.
Kidd, G. P., Roann.
Lower, M. O., Liberty Mills.
Mendenhall, W. T., North Manchester.
Mitchell, S. P., Mt. Etna.
Mooney, H. C., Laketon.
Moor, P. G., Rich Valley.
Murphy, R., Roann.
O'Neal, L., Somerset.
Peters, E. P., Wabash.
Renner, J. H., Lagro.
Smith, A. J., Wabash.
Thomas, E. B., Lagro.
Thomas, A. McD., LaFontain.
Waddel, C., North Manchester.
Winton, H., North Manchester.
Williams, O. B., Antioch.

WARREN COUNTY.

Officers.

S. C. Fenton.....President.
C. W. Osburn.....Secretary.
Justin Ross.....Treasurer.

Members.

Birch, E. R., State Line.
Fenton, S. C., Pine Village
Hoffman, C. H., Rainsville.
McMullen, J. W., Pine Village.
Osburn, C. W., Marshfield.
Osborn, S. N., Rainsville.
Porter, A. M., State Line.
Ross, J., Williamsport.

WARRICK COUNTY.

Officers.

D. A. DeForest.....President.
W. W. Wilson.....Vice-President.
T. J. Hargan.....Secretary.
W. Daily.....Treasurer.

Members.

Barker, W. L., Boonville.
Bevis, W. I., Lake.
Daily, W., Boonville.
Daily, J. M., Lake.
Daily, T., Boonville.
DeForest, D. A. Boonville.
Hargan, T. J., Boonville.
Howard, T. M., Boonville.
Hunt, W. A., Lynnville.
Jones, T. B., Lynnville.
Keegan, C. J., Canal.
McCoy, T. J., Eby.
McCoy, L. H., Richland.
Scales, W. B., Boonville.
Smith, T., Lynnville.
Tyner, S. L., Lynnville.
Temple, J. R., Yankeetown.
Wilson, W. W., Boonville.

WAYNE COUNTY.

Officers.

Edwin Hadley.....President.
S. T. Sweeney.....Vice-President.
J. J. Daily.....Secretary.
A. T. Buchanan.....Treasurer.

Censors.

A. B. Bradbury. C. N. Blount. Mary F. Thomas.

Members.

Blount, C. N., Hagerstown.
Boyd, S. S., Dublin.
Bradbury, A. B., Cambridge City.
Buchanan, A. T., Cambridge City.
Dailey, J. J., Milton.
Gans, P. T., West Florence, Ohio.
Hadley, E., Richmond.
Hibberd, J. F., Richmond.
Hobbs, M. W., Richmond.
Johnson, L. R., Cambridge City.
Mauk, J. R., East Germantown.
McIntire, J. H., Richmond.
Pennington, Joel, Milton.
Rutledge, J. W., Cambridge City.
Swallow, E., East Germantown.
Sweeney, S. T. Milton.
Thomas, M. F., Richmond.
Taylor, J. E., Richmond.
Tilson, H., Centerville.
Wiest, J. R., Richmond.

WHITE COUNTY.

(Officers not reported).

Members.

Black, R. S., Idaville.
Didlake, M. T., Wolcott.
Grant, F. A., Wolcott.
Maxwell, S. S., Remington.
Spencer, William, Monticello.
Wood, J. A., Monticello.